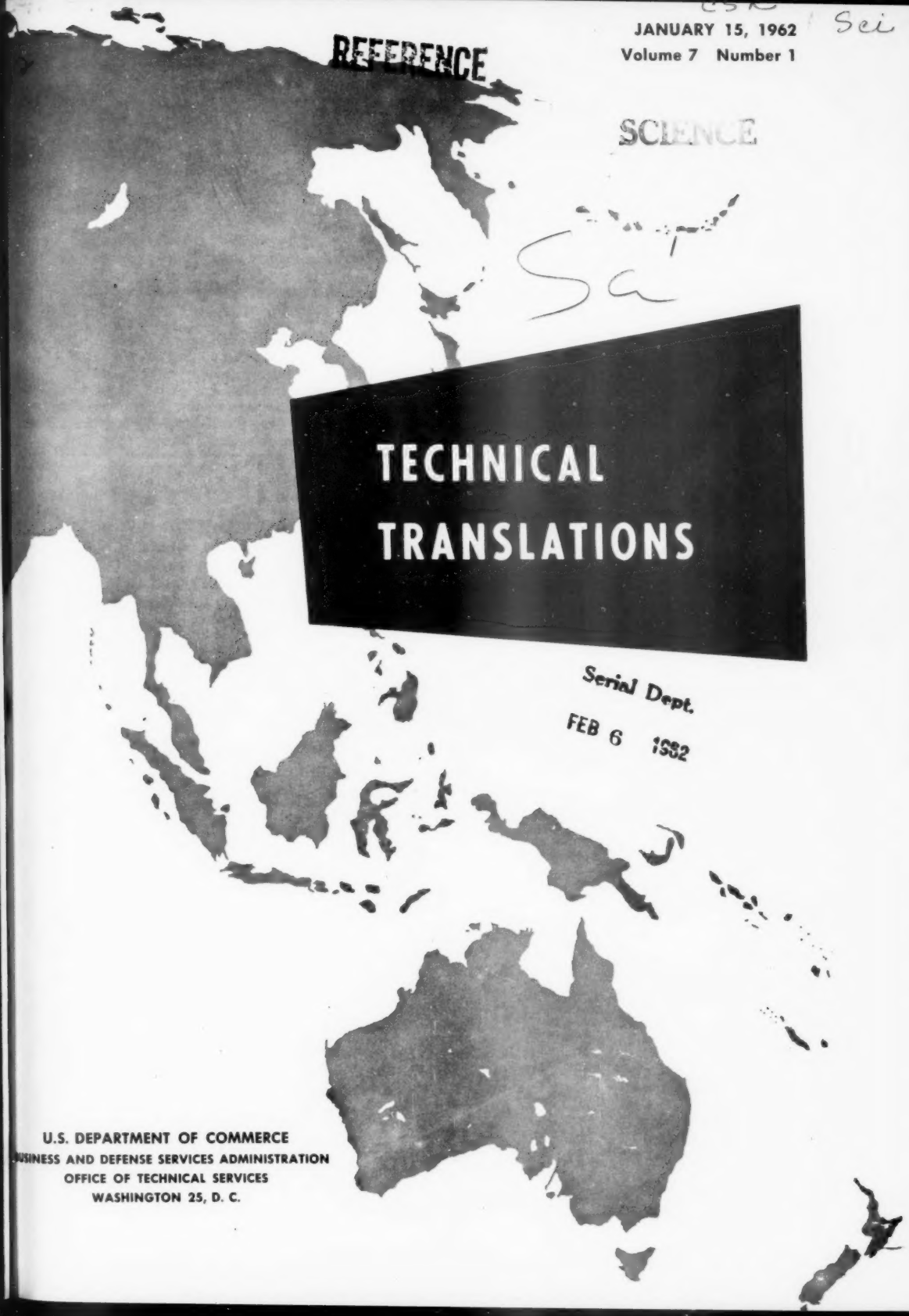
REFERENCE

JANUARY 15, 1962
Volume 7 Number 1

SCIENCE



TECHNICAL TRANSLATIONS

Serial Dept.
FEB 6 1962

U.S. DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, Secretary

BUSINESS AND DEFENSE SERVICES ADMINISTRATION

Office of Technical Services
John C. Green, Director

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SYMBOLS FOR SOURCES OF TRANSLATIONS

AC
A. Capelo
P. O. Box 46354
Hollywood 46
California

AGI
AGI Translations Office
American Geological Institute
2101 Constitution Avenue, N. W.
Washington 25, D. C.

AGS
American Geographical Society
Broadway at 156th Street
New York 32, New York

AGU
American Geophysical Union
1515 Massachusetts Avenue, N. W.
Washington 5, D. C.

AIBS
American Institute of Biological Sciences
2000 P Street, N. W.
Washington 6, D. C.

AIP
American Institute of Physics
335 East 45th Street
New York 17, New York

AIS
Argus Information Service
624 N. Eutaw Street
Baltimore 1, Maryland

AM
Acta Metallurgica
122 East 55th Street
New York 22, New York

ANSP
Academy of Natural Sciences of Philadelphia
19th Street and the Parkway
Philadelphia 3, Pennsylvania

API
Academic Press, Inc.
111 Fifth Avenue
New York 3, New York

ATS
Associated Technical Services, Inc.
P. O. Box 271
East Orange, New Jersey

BIHR
Circulation Manager
Translations of the Beltone Institute for Hearing Research
2900 West 36th Street
Chicago 32, Illinois

BISI
British Iron & Steel Industry Translation Service
The Iron and Steel Institute
4, Grosvenor Gardens
London, S. W. 1, England

BWRA
British Welding Research Association
Abington Hall, Abington
Cambridge, England

CB
Consultants Bureau Enterprises, Inc.
227 West 17th Street
New York 11, New York

CCT
Consultants Custom Translations, Inc.
227 West 17th Street
New York 11, New York

CHP
Cleaver-Hume Press, Ltd.
31, Wright's Lane
London, W. 8, England

CIDNT
Centralny Instytut Dokumentacji Naukowo-Technicznej
Warszawa 12
Aleja Niepodleglosci 188
Poland

CSIRO
Commonwealth Scientific and Industrial Research Organization
Information Service
314 Albert Street
East Melbourne C. 2, Victoria
Australia

CTRA
The Librarian
The Coal Tar Research Association
Oxford Road
Gomersal, Leeds, England

CTS (Chem)
Chemical Translating Service
2243 Greer Road
Palo Alto, California

CTT
Columbia Technical Translations
5 Vermont Avenue
White Plains, New York

DI
Circulation Unit
Department of the Interiror
Central Library
Room 1149
Washington 25, D. C.

EIS
Engineering Information Services
Kirkham, Preston, Lancashire, England

ES
Erica Stux
584 Moreley Avenue
Akron 20, Ohio

ETC
European Translations Centre
Doelenstraat 101, Delft,
The Netherlands

FRI
Fulmer Research Institute, Ltd.
Stoke Poges
Buckinghamshire,
England

FT
Faraday Translations
15 Park Row
New York 38, New York

GB
Gordon and Breach
Publishers, Inc.
150 Fifth Avenue
New York 11, New York

GPO
Superintendent of Documents
Government Printing Office
Washington 25, D. C.

HB
Henry Brutcher
P. O. Box 157
Altadena, California

HMSO
Her Majesty's Stationery Office
P. O. B. 569
London, S. E. 1, England

HTCBN
Hungarian Trading Company for Books and Newspapers "Kultura"
Budapest 62, P. O. Box 149

INFOSERV
Infoserv
967 Farmington Avenue
West Hartford 7, Connecticut

IP
Interscience Publishers, Inc.
250 Fifth Avenue
New York 1, New York

K-H
Kresge-Hooker Science Library Associates
Wayne State University
Detroit 2, Michigan

LAND-AIR
Land-Air, Inc.
Pacific Missile Range
Point Mugu, California

LC
Photoduplication Service
Publication Board Project
Library of Congress
Washington 25, D. C.

LSA
Literature Service Associates
Route 1
Bound Brook, New Jersey

MACL
Maclaren and Sons, Ltd.
Maclaren House
131 Great Suffolk Street
London, S. E. 1, England

MDF
Morris D. Friedman, Inc.
P. O. Box 35
West Newton 65, Massachusetts

MT
M. de O. Tollemache
The Old Rectory
Lewknor, Oxon, England

NASA
National Aeronautics and Space Administration
1520 H Street, N. W.
Washington 25, D. C.

NRCC
National Research Council, Library
Ottawa 2, Canada

OB
Oliver & Boyd, Ltd.
Tweeddale Court
14 High Street
Edinburgh 1, Scotland

OSA
Optical Society of America, Inc.
33 University Road
Cambridge 38, Massachusetts

OTS
Office of Technical Services
Department of Commerce
Washington 25, D. C.
(Also available through Department of Commerce Field Offices)

PERA
The Information Manager
Production Engineering Research Association
Melton Mowbray
Leicestershire, England

PLP
Plenum Press, Inc.
227 West 17th Street
New York 11, New York

PP
Pergamon Press
122 East 55th Street
New York 22, New York

PS
Primary Sources
11 Bleecker Street
New York 12, New York

RIA
Research International Associates
1522 Connecticut Avenue, N. W.
Washington 6, D. C.

RIS
Research Information Service
40 East 23rd Street
New York 10, New York

SA
Seizaburo Aoki
1069 Minami Nakadori 2-chome
Fujisawa, Japan

SLA
SLA Translations Center
The John Crerar Library
86 East Randolph Street
Chicago 1, Illinois

STT
SCIENTECH, Scientific and Technical Translations
P. O. Box 3530
Cleveland 18, Ohio

TDL
Mr. John Wiley
Technical Development Laboratories
P. O. Box 769
Savannah, Georgia

TF
Taylor and Francis Ltd.
Red Lion Court, Fleet Street
London, E. C. 4, England

TIC
Technical Information Company
Chancery House
Chancery Lane
London, W. C. 2, England

TTIS
Translation and Technical Information Services
32, Manaton Road
London, S. E. 15, England

WBI
Warren Birkenhead, Inc.
No. 1, Kasumi-cho, Azabu
Minato-ku,
Tokyo, Japan

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Massachusetts Institute of Technology Libraries
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UNITED STATES DEPARTMENT OF COMMERCE
BUSINESS AND DEFENSE SERVICES ADMINISTRATION
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

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Descriptors marked with an asterisk are included in the subject index.

AGRICULTURE

SOVIET AGRICULTURE: [SELECTED TRANSLATIONS] NO. 76. 23 May 61 [30]p. JPRS: 8318.
Order from OTS or SLA $1.60 61-27130

Trans. of Sovkhoznoe Proizvodstvo (USSR) 1961, no. 2 p. 2-4, 13-18; Mezhdunarodnyi Sel'skokhozyaistvennyi Zhurnal (Bulgaria) 1961 [v. 5] no. 1, p. 130-133; Khlopkovodstvo (USSR) 1961, no. 2, p. 34-36; and Agitator (USSR) 1961, no. 5, p. 22-25.

DESCRIPTORS: *Agriculture, Periodical, USSR, Labor, Production, Organization, Nitrogen, *Fertilizers.

Contents:
Exceed the market demands of the population
RSFSR sovkhozes must operate better, by S. A. Deryabin
Use of aviation in USSR agriculture, by V. Nazarov
New type of mixed nitrogen fertilizer, by A. M. Guseinov and Z. M. Mukhtarov
Corn is our wealth, by V. Solov'ev.

Animal Husbandry

Olenin, F. S., Gritsai, S. P., and Golodnyi, I. F.
A NEW METHOD OF FEEDING LAMBS, AND ITS EFFECTIVENESS (Novaya Tekhnika Kormleniya Yagnyat i Ee Ekonomicheskaya Effektivnost') tr. by M. Slade. [1961] [7]p. (foreign text included). [CSIRO] Trans. no. 5237.
Order from OTS or SLA $1.10 61-28469

Trans. of Sel'skoe Khozyaistvo Povolzh'ya (USSR) 1957 [v. 2] no. 6, p. 67-69.

DESCRIPTORS: *Sheep, Nutrition, Growth, Feeding, Test methods, Tests.

In a 74-day experiment involving 40 merino-Precoce crossbred lambs 5 to 6 months old, and in a 60-day experiment with a flock of 680 lambs, the test groups (half of each flock) that were fed 20% more food during their 6-day periods of slow growth and 20% less food during their 6-day periods of fast growth gained 22% to 32% more weight than the control groups that were fed the same total quantity of the same rations but in equal amounts every day. The wool clip of the lambs fed according to the rhythmic pattern was also greater (about 10%) than that of the lambs fed an equal amount every day.

Tarczynski, S.
PARASITIC WORMS OF SWINE AND WILD BOARS IN POLAND (Robaki Pasozytnicze Swin i Dzikow w Polsce) tr. by Ryszard Dzieciolowski. 1961, 67p. 118 refs. PL-480 Agr.
Order from OTS $0.50 60-21225

Trans. of reprint of Acta Parasitologica Polonica, 1956, v. 4, no. 20, p. 663-750.

DESCRIPTORS: *Swine, *Parasites, *Worms, Poland.

The parasites belonging to 4 fluke species (Trematoda) 3 tapeworm species (Cestoda), 11 nematode species (Nematoda) and 1 thorny headed worm species (Acanthocephala) parasitizing in Suidae in Poland, were collected during the dissection of 268 swine and 61 wild boars, coming from most of the districts of Poland. The specific composition of the helminthfauna of Suidae in Poland does not contain several species of parasitic worms found in other European countries. A comparison of the extensiveness and intensity of invasion of worms parasitizing in Suidae in various parts of the world bears out the thesis regarding most of the common parasitic diseases as the so-called breeding diseases, for both the expansion of the common parasites of swine and the intensity of their invasion in various hosts organisms clearly increase with the growth of the culture of cattle raising, their highest figures representing countries of a high level of breeding.

Tarczynski, S.
A STUDY OF THE MORPHOLOGY AND DEVELOPMENTAL CYCLE OF THE EUROPEAN FORM OF STRONGYLOIDES RANSOMI SCHWARZ AND ALICATA, 1930 (Badania nad Morfologia i Cyklem Rozwojowym Europejskiej Formy Wegorka Swinskiego Strongyloides Ransomi Schwarz et Alicata, 1930) tr. by Ryszard Dzieciolowski, 1961, 23p. 26 refs. PL-480 Agr.
Order from OTS $0.50 60-21226

Trans. of reprint of Acta Parasitologica Polonica, 1956, v. 4, no. 19, p. 627-661.

DESCRIPTORS: *Swine, *Parasites, *Worms, Growth, Europe.

Under favourable environmental conditions the eggs laid by the parasitic female and expelled with the host's feces hatch quickly after 12 to 18 hours. Eggs of the species, which are covered with a thin shell, are very susceptible to temperature fluctuations and to desiccation. The low resistance of invasive larvae to drying and the action of direct sun-rays indicate that dry and sunny runs and light and dry pigsties are a condition for the efficient prevention of Strongyloides ransomi invasion.

Wiidik, R. W.
FURTHER INVESTIGATIONS OF THE SWEDISH AVIRULENT ERYSIPELAS VACCINE AV/R9 (Weitere Untersuchungen über den Schwedischen Avirulenten Rotlaufimpfstoff AV/R9). [1961] [19]p.
Order from SLA 61-18820

Trans. of [Zentralblatt für Veterinärmedizin (Germany) 1958, v. 5, no. 1, p. 1-16].

DESCRIPTORS: Sweden, Tests, Storage, Temperature, Stability, *Swine erysipelas, Countermeasures, Immunization.

Answers were obtained for the following questions. How should testing of this vaccine with respect to its immunization power be accomplished? What influence does erysipelas immune serum, injected simultaneously with vaccination of AV/R9, have on the development of an active immunity? Is vaccination with AV/R9 during the incubation period of an erysipelas infection detrimental to the vaccinated animal? What influence do storage time and temperature have on the stability of the vaccine with regard to its immunization power?

Plant Cultivation

Akhromeiko, A. I.
PHYSIOLOGICAL FOUNDATIONS OF THE INCREASED PRODUCTIVITY OF FORESTS (Fiziologicheskoe Obosnovanie Povysheniya Produktivnosti Lesov). [1961] 11p. PL-480 Agr.
Order from OTS $0.50 60-21866

Trans. of Lesnoe Khozyaistvo (USSR) 1958, v. 11 no. 6, p. 10-16.

DESCRIPTORS: *Trees, Nutrition, Growth, Physiology, *Fertilizers, Effectiveness, Moisture, Absorption, *Microorganisms.

Topic headings are entitled: (1) The role of organic, mineral and lime fertilizers in the increase of forest productivity; (2) the role of microorganisms in the nutrition of trees; (3) determination of actively absorbing zones (sections) of the tree root systems; and (4) rate of absorption and movement of water and nutritive substances in trees.

Dominik, T. and Pachlewski, R.
INVESTIGATIONS ON MYCOTROPHISM OF PLANT ASSOCIATIONS IN THE LOWER TIMBER ZONE OF THE TATRA (Badanie Mykotrofizmu Zespolor Roslinnych Regla Dolnego w Tatrach) tr. by Albert Radziwill. 1961 [20]p. 14 refs. PL-480 Agr.
Order from OTS $0.50 60-21384

Trans. of [Polskie Towarzystwo Botaniczne]. Acta Societatis Botanicorum Poloniae, 1956, v. 25, no. 1, p. 3-26.

DESCRIPTORS: Mountains, Czechoslovakia, *Plants, Nutrition, *Fungi, Soils, Climate, Physiology, Growth.

Spruce associations of the upper timber zone belong to the most mycotrophic associations of the Tatra. Obligatorily mycotrophic species produce mycorrhizae even in mud, if the water flows rapidly. Cenococcum graniforme is the most commonly occurring fungus, but it does not form mycorrhizae in every soil. Cenococcum graniforme may produce ectotrophic mycorrhizae even with herbaceous plants. The genus Rhizophagus spec. belongs to the cosmopolitan species of mycorrhizal fungi. Cenococcum graniforme also in natural conditions forms the "chlamydospores" described by Mikola (1948), they are borne however on conidiophores. Transitions were found between aggregations of hyphae in the rhizosphere of roots (peritrophic mycorrhiza Jahn) and the ectotrophic mycorrhizae. In forest associations of the lower timber zone mycotrophism attains a very stable limit - about 70 percent are mycotrophic species (69-72 percent). Studies on spruce mycorrhizae carried out according to the classification established by Dominik revealed that less diversified symbiosis occurs in the highest mountain regions where spruces still occur and it is most varied in Piceetum excelsum normale in the upper timber zone and in Fageto-Abietetum in the lower zone. The diversity of mycotrophic symbiosis has, however, nothing to do with the intensity of mycotrophism which was the highest in a Piceetum excelsae myrtilletosum association with Sphagnum in the upper timber zone.

Kovarskii, A. E.
THE EFFECT OF MENTOR POLLEN IN THE SELF POLLINATION OF CORN (Mentoral'noe Vliyanie Pyl'ts y pri Samoopylenii Kukuruzy). 1961, 8p. PL-480 Agr.
Order from OTS $0.50 60-21892

Trans. of Selektsia i Semenovodstvo (USSR) 1956 [v. 21] no. 4, p. 7-12.

DESCRIPTORS: *Corn, *Pollen, Fertility, Growth.

In the presence of pollen from other corn plants of the same variety, other corn varieties, or even the pollen of other botanical species (e.g., African millet, sunflower, sorghum, pumpkin, or hybiscus), the percentage of seed setting reaches up to 99.7%. The progeny from seeds obtained by self-pollination with the participation, as a mentor, of pollen from other plants, is vigorous and often approaches the initial variety in its productivity and viability. The effect of alien mentor pollen is most evident when mixed (1:5 to 1:3 ratio) with freshly collected pollen of the maternal plant and applied to the viable pistil-styles of the corn.

Tanasijevic, Dj., Sandic, M., and Pavicevic, N.
SOIL TYPES IN VICINITY OF BELGRADE AND OBRENOVAC (Tipovi Zemljista u Okolini Beograda i Obrenovca) tr. by Slavko Todorovic, ed. by Ljubisa Zecevic. 1[illegible] i, 53p. 9 refs. PL-480 agr.
Order from TS $0.75 60-21617

Trans. of A niv za Poljoprivredne Nauke [i Tehniku] (Yugoslavi[illegible] 1951, v. 4, no. 6, p. 3-53.

DESCRIPTORS: *Soils, Yugoslavia, Classification, Physical properties, Chemical properties, Geology, Climate, Trees.

ASTRONOMY

Vitkevich, V. V.
A MAJOR CENTER OF RADIO ASTRONOMY. 14 Sep 61 [13]p. JPRS: 8868.
Order from OTS or SLA $1.60 61-28594

Trans. of Akademiya Nauk SSSR. Vestnik, 1961 [v. 31] no. 5, p. 23-32.

DESCRIPTORS: *Radio astronomy, *Astronomical observatories, USSR.

One of the leading groups of personnel in this field of science in the USSR is concentrated in the Laboratory of Radio Astronomy of the Physics Institute im. P. N. Lebedev of the Academy of Sciences of the USSR. The laboratory is conducting its basic scientific work at the Oka Radio Astronomical Station, which is now being established, and in part at the Crimean Scientific Station. Here are being developed the most up-to-date aspects of modern radio astronomy -- investigations of radio emissions of the sun, especially disturbed radio emission (in disequilibrium, sporadic), the sun's outer corona, radio emission of the Galaxy and Metagalaxy, of the planets and the moon, and hydrogen in the 21-cm line. (Extract)

Astrophysics

SPECTRAL, ELECTROPHOTOMETRIC AND RADAR STUDIES OF AURORAS (AURORA POLARIS) AND NIGHT AIRGLOW: (Spektral'nye, Elektrofotometricheskie: Radiolokatsionnye Issledovaniya Polyarnykh Siyanii i Svecheniya Nochogo Neba). Sect. 4 of the IGY Program, Aurorae and Airglow. Aug 61 [99]p. 114 refs. JPRS: 8752.
Order from OTS or SLA $8.60 61-27714

Trans. of Polyarnye Siyaniya i Svechenie Nochnogo Neba: Sbornik Statei (USSR) 1960, no. 2/3, 73p.

DESCRIPTORS: *Aurorae, Radar analysis, *Radar reflections, *Night sky, Spectrographic analysis, Photometers, Spectrophotometers, *Radio waves, Absorption, *Upper atmosphere, Temperature, Determination.

Contents:
Certain summary results of radar studies of auroras, by B. A. Bagaryatskii
Certain peculiarities in the diurnal course of radio echoes from auroras, based on observations at various stations, and the character of daytime radio echoes, by Ya. G. Birfel'd
Radar reflections during geomagnetic disturbances, by A. I. Grachev
Certain results of radar studies of auroras in the vicinity of their maximum recurrence zone, by A. I. Grachev
The connection between radar reflections from auroras and disturbances of the geomagnetic field, by V. I. Pogorelov
Brief review of results of radar observations at the Roshchino Station, by V. I. Pogorelov
Radar reflections from auroras and their connection with magnetic disturbances, by V. I. Yarin
Study of the absorption of radio waves in the auroral zone, by B. P. Potapov and others
Variation of the relative brightness of the λ6300 and 5577 Å emissions in different aurora forms, by N. V. Dzhordzhio
Certain results of electrophotometric and spectrographic observations of night airglow in Abastumani, by L. M. Fishkova and G. V. Markova
Intensities of some night sky emissions, by N. N. Shefov
Spectrophotometric study of the low-altitude aurora of 29-30 Sep 57, by Z. V. Karyagina
Determination of the temperature of the upper atmosphere according to the rotational bands of the hydrozyl spectrum, by R. Kh. Gainullina and Z. V. Karyagina
On the [NI] λ5200 Å emission, by A. V. Mironov
Certain peculiarities of night airglow spectra and low-altitude auroras, by V. S. Prokudina
Spectroscopic observations of the radiation of the night sky and auroras in Tixie Bay, by P. I. Sukhoivanenko
Spectroscopic observations of the radiation of the night sky and auroras in Yakutsk, by V. I. Yarin.

Severnyi, A. B.
VARIABLE PROCESSES IN SOLAR FLARES AS A PHENOMENON OF PINCH-EFFECT. 27 Feb 61 [33]p. 21 refs. MCL-82/1+2; AD-257 651.
Order from OTS or SLA $3.60 61-23672

Unedited rough draft trans. of mono. [Nestatsionarnye Protsessy v Solnechnykh Vspyshkakh kak Proyavlenie Pinch-Effekta] Moscow, 1958, 18p.

DESCRIPTORS: *Solar flares, *Magnetic pinch, Shock waves, Solar atmosphere, Hydrogen, Magnetic fields, Spectrographic analysis.

An analysis of 4 great flares observed in 1957 (degrees of importance 2+ to 3) confirms an earlier conclusion (Akad. Nauk SSSR Krymskaya Astrofiz. Observatoriya Izvest. 17: 129-161, 1957; available in translation from LC or SLA as 60-14228) that mustaches are associated with highly nonstationary explosion-like processes commencing with a shock wave and emission of high-velocity atoms predominantly in two opposite directions. Further considerations show that these processes originate in the magnetic pinch effect and the collision of shock waves. (See also 59-19537, 60-14232)

BEHAVIORAL SCIENCES

Faverge, J. M.
NON METRIC ITEM-TEST CORRELATION (La Corrélation Item-test Non Métrique). [1961] [19]p. 6 refs.
Order from SLA $1.60 61-20434

Trans. of Centre d'Études et Recherches Psychotechniques. Bulletin (France) 1956, v. 5, no. 1, p. 25-32.

DESCRIPTORS: Tests, *Correlation techniques, Statistical functions, *Psychology.

BIOLOGICAL SCIENCES

Komarover, N. E.
THE USE OF PHENOTHIAZINE DERIVATIVES IN THE PREOPERATIVE PREPARATION OF PATIENTS WITH THYROTOXICOSIS (Primenenie Proizvodnykh Fenotiazina v Predoperatsionnoi Podgotovke Bol'nykh Bazedovoi Bolezn yu). 13 Sep 61 [10]p. 7 refs.
JPRS: 10144.
Order from OTS or SLA $1.10 61-28403

Trans. of Vestnik Khirurgii (USSR) 1961, v. 86, no. 6, p. 8-12.

DESCRIPTORS: *Hyperthyroidism, *Thyroid gland, Drugs, Diseases, Nervous system, Metabolism, Reduction, *Phenothiazine derivatives, Barbiturates, *Surgery.

The preoperative use of phenothiazine derivatives (thorazine and phenergan) in combination with long-acting barbiturates (luminal) in patients with thyrotoxicosis leads to a rapid elimination of vegetative nervous system disorders, improves the feeling of well being of the patients, considerably reduces the basal metabolism and moderately reduces the temperature and blood pressure. Pharmacologic preparations should be conducted continuously with consideration of the degree of thyrotoxicosis and the age, the pharmacological properties of the neuroplegics and under conditions of bed rest and systematic check on the pulse rate, temperature and blood pressure. Along with the dynamics of the clinical signs of disease the most objective criterion of the effectiveness of preoperative preparation of the patients is the degree of reduction in the basal metabolic rate. (Author)

Biochemistry

Baranova, B. Z., Deborin, G. A., and Oparin, A. I.
INFLUENCE OF DNA UPON THE ENZYMATIC ACTION OF PAPAIN AND OF THE DEHYDROGENASE OF GLYCERALDEHYDE PHOSPHATE. [1961] [5]p. 20 refs.
Order from OTS or SLA $1.10 61-27255

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 130 [no. 2] p. 450-452.

DESCRIPTORS: *Nucleic acids, Acids, Metabolism, *Papain, Enzymes, *Glyceraldehydes, *Phosphates, *Dehydrogenases, Aldehydes.

Experiments with papain indicate that DNA retards the enzymatic action of glyceraldehyde phosphate dehydrogenase (GAPD), the magnitude of this retardation being a definite function of the amount of GAPD added. The ferment reaction came to a full stop when 1.55 mg of DNA was added.

Khesin, R. V.
RATE OF EXCHANGE OF PHOSPHORUS OF THE RIBONUCLEIC ACID OF THE STRUCTURAL ELEMENTS OF CYTOPLASM DURING DIFFERENT PHYSIOLOGICAL STATES [Skorost' Obmena Fosfora Ribonukleinovoi Kisloty Strukturnykh Elementov Tsitoplazmy pri Razlichnykh Fiziologicheskikh Sostoyaniyakh] tr. by Zelda D. Knowles. 1 July 53, 33p. (1 fig. omitted) 31 refs.
Order from OTS or SLA $3.60 61-28102

Trans. of Biokhimiya (USSR) 1952, v. 17, no. 6, p. 664-675.
Another trans. is available from SLA as RT-127.

DESCRIPTORS: *Phosphorus, *Nucleic acids, *Chromosomes, *Cells (Biology), Exchange reactions, Secretion, Proteins, Embryos, Nuclei (Biology).

Data are presented supporting an assumption on the direct participation of the large granules of the cytoplasm in the processes of the intracellular synthesis of proteins both secretory and structural.

Makarov, P. V.
THEORY OF THE CONTINUITY OF DESOXYRIBONUCLEIC ACID IN THE CELL AND CRITICISM OF THE THEORY. [1961] [42]p. 26 refs.
Order from OTS or SLA $4.60 61-27994

Trans. of Uspekhi Sovremennoi Biologii (USSR) 1956, v. 41, p. 3-25.

DESCRIPTORS: Theory, *Nucleic acids, Biology, Proteins, Molecules, Genetics, Chromosomes, Mitosis, *Cells (Biology), Embryos, Histology, Biochemical genetics.

Simakov, P. W.
METHOD FOR THE DETERMINATION OF THE PEROXIDASE ACTIVITY OF THE BLOOD, tr. by Zelda D. Knowles. 6 July 50, 5p. (1 table omitted).
Order from OTS or SLA $1.10 61-28092

Trans. of Biokhimiya (USSR) 1945, v. 10, no. 4, p. 360-362.

DESCRIPTORS: *Peroxidase, Enzymes, *Blood, Blood chemistry, Oxidation, Catalysts, *Microchemistry, Dyes.

A new micromethod is described for the quantitative determination of blood peroxidase with the use of the organic dye indigo carmine in the character of an oxidized substrate. It is possible to proportion the latter accurately, in consequence of which there is an opportunity to compute quantitatively by the activated

ferment the oxygen which leads to the oxidation of the substrates. The method is comparatively accurate, give ±5% error. It is simple in execution, and in consequence of the rapidity of carrying it out it can be recommended for serial determinations. (Author)

Volkova, R. L., Godovikov, N. M. and others.
THE CHEMICAL STRUCTURE AND THE BIOLOGICAL ACTIVITY OF ORGANOPHOSPHORUS INHIBITORS OF CHOLINESTERASE. 29 Sep 61 [16]p. (8 refs. omitted) 10 refs. JPRS: 10397.
Order from OTS or SLA $1.60 61-28723

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1961, v. 7, no. 3, p. 250-258.

Portions of this report will not reproduce well.

DESCRIPTORS: *Cholinesterase, Inhibition, *Phosphorus compounds, Organic compounds, Molecular structure, Biochemistry.

General Biology

Makarov, P. V.
KRITIK DER ZYTOLOGISCHEN GRUNDLAGEN DER "CHROMOSOMENTHEORIE DER VERERBUNG" (Kritika Tsitologichesskikh Osnov "Khromosomnoy Teorii Nasledestvennosti"). [1961] 28p. 60 refs. [DSIR LLU] M2127 (text in German).
Order from OTS or SLA $2.60 61-13622

Trans. in German of mono. Protiv Reaktsionnogo Mendelizma-Morganizma, n.p., n.d. (printed in Sowjetwissenschaft. Naturwissenschaftliche [Beiträge] (West Germany) 1951, v. 4, no. 2, p. [167]-194).

DESCRIPTORS: *Cytology, *Chromosomes, Cells (Biology) *Spermatogenesis.

Smyrnova-Zamkova, O. I. and Mel'nychenko, G. V
GROUND SUBSTANCE, ITS COMPOSITION AND FUNCTIONAL SIGNIFICANCE (Osnovna Rechovyna, Yiyi Sklad i Funktsional'ne Znahchennya). 11 Sep 61 [14]p. 24 refs. JPRS: 9973.
Order from OTS or SLA $1.60 61-28070

Trans. of Fiziologichnyi Zhurnal (USSR) 1961, v. 7, no. 2, p. 277-283.

DESCRIPTORS: Collagen, Tissues (Biology), *Nerves, *Neuromuscular transmission, Transmission

A review of Russian research and that of other countries indicates that in tissue permeability a basic role must be attributed to a cellular structures. It is stated that argyrophilic ground substance is the final link in the transmission of nerve impulses from nerve receptors to effector cell organs. References cover period from 1894 through 1959.

Pathology

Jansen, G.
THE EFFECTS OF NOISE ON WORKERS IN THE IRON AND STEEL INDUSTRY. Oct 61.
Order from BISI £2 15s BISI-2323

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 16 Feb, p. 217-220.

DESCRIPTORS: Iron industry, Steel industry, *Noise, *Pathology, Personnel, Labor.

Musina, Sh. V.
ROLE OF MEDICAMENTOUS SLEEP AND GROWTH OF THE RECIPIENT IN THE SKIN HOMOPLASTY OF RATS, tr. by Zelda D. Knowles. 11 May 53, 10p. (4 figs. omitted) 2 refs.
Order from OTS or SLA $1.10 61-28022

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 84, no. 5, p. 1089-1092.

DESCRIPTORS: *Sleep, Growth, *Skin, Rats, *Transplantation, Surgery, Medical research, Preservation, Age factors.

Petrova, A. N.
STUDY OF THE PROCESSES OF ENZYMATIC GLYCOGEN DECOMPOSITION IN MUSCLES OF RABBITS WITH ALLOXAN DIABETES [Izuchenie Protsessov Enzimaticheskogo Raspada Glikogena v Myshtsakh pri Alloksanovom Diabete u Krolikov] tr. by Zelda D. Knowles. 13 Aug 53, 15p. (3 figs. omitted) 6 refs.
Order from OTS or SLA $1.60 61-28097

Trans. of Biokhimiya (USSR) 1952, v. 17, no. 4, p. 469-475.
Another trans. is available from SLA as RT-129.

DESCRIPTORS: Decomposition, Muscles, Rabbits, *Glycogen, Glycolysis, Diseases, *Alloxan, Toxicology, *Diabetes, Cells (Biology), Mitosis, Liver, Carbohydrates, *Insulin, *Deficiency diseases.

The process of glycogen decomposition in experiments in vitro in extracts of muscles of rabbits with alloxan diabetes is considerably obstructed as compared with normal animals. This weakening of the glycogen decomposition occurs as a consequence of the obstruction both of the phosphorolytic and of the hydrolytic cleavage of glycogen. During alloxan diabetes undialyzed extract of muscles possesses a considerably lesser capacity to activate the processes of phosphorolytic and of hydrolytic glycogen decomposition in experiments in vitro as compared with extracts of muscles of normal animals. (Author)

Popov, V. V. and Borsuk, R. A.
REPLACEMENT OF CORNEA IN ADULT FOWL WITH EMBRYONAL SKIN [Zameshchenie Rogovitsy u Vzroslykh Ptits Embrional'noi Kazhei] tr. by Z. D. Knowles. 28 Oct 53, 10p. 6 refs.
Order from OTS or SLA $1.10 61-28023

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 85, no. 5, p. 1181-1184.
Another trans. is available from SLA as RT-257.

DESCRIPTORS: *Chickens, *Skin, *Eye, Therapy, *Transplantation, Surgery, Tissues (Biology), *Embryos, Age factors, Regeneration,

Ström, Justus.
MENINGITIS SEROSA. I. GENERAL CONSIDERATIONS, tr. by P. Pallamary. 6 Nov 59, 7p.
Order from OTS or SLA $1.10 59-22397

Trans. of Nordisk Medicin (Sweden) 1956, v. 55, p. 857ff.

DESCRIPTORS: *Meningitis, Membranes, Pathology, *Fetal membranes.

Veyrat, R., Engel, E. and others.
USEFULNESS OF COMBINING SALURETICS AND ALDOSTERONE INHIBITORS (SC 9420 AND SU 4885) IN REFRACTORY EDEMA (Utilité de l'Association des Salurétiques et des Inhibiteurs de l'Aldostérone (SC 9420 and SU 4885) dans le Traitement des Oedèmes Réfractaires). July 61, 9p. 1 ref.
Order from SLA $1.10 61-20046

Trans. of Helv[etica] Med[ica] Acta (Switzerland) 1960, v. 27, Dec, p. 683-689.

DESCRIPTORS: *Diuretics, *Aldosterone, Therapy, *Edema, *Sodium, Absorbtion, Inhibition.

The principal mechanisms responsible for sodium retention in the proximal and distal parts of the renal tubule are discussed. It is the preponderance of one or the other of these mechanisms which dictates the choice of a diuretic. In all those cases where both contribute to sodium retention, it is necessary to turn to a combination of diuretic agents (saluretics, inhibitors and antagonists of aldosterone and osmotic diuresis by hypertonic mannitol). (Author)

Zoology

Berim, N.G. and Edelman, N.M.
METHODEN VOOR HET OVERWINNEN VAN DE PHYSIOLOGISCHE RESISTENTIE VAN INSECTEN TEGEN DICHLOORDIPHENYLTRICHLOORAETHAAN (DDT) EN HEXACHLOORCYCLOHEXAAN (HCCH) (Methods for conquering the physiological resistance of insects against 2,2-bis(p-chlorophenyl)-1,1,1-trichloroethane (DDT) and hexachlorocyclohexane (HCCH)). 7 p. 2 refs. MTWL: 452. (Text in Dutch).
Order from OTS or ETC $1.55 61-17041

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 73, no. 2, p. 425-428.

DESCRIPTORS: *Insects, *Resistance, Physiology, *Hexachlorocyclohexanes, *DDT.

Kawecki, Z[bigniew].
THE NUT OR THORN SCALE - LECANIUM CORYLI (L.) SENSU MARCHAL NEC SULC (HOMOPTERA, COCCOIDEA, LECANIIDAE) (Miesecznik Miechun) tr. by Jacques Rossi. Pt. 5 of Studies on the Genus Lecanium Burm. (Studia Nad Rodzajem Lecanium Burm. Czesc V). 1961, 23p. 48 refs. PL-480 Agr.
Order from OTS $0.50 60-21402

Trans. of Polskie Pismo Entomologiczne, 1957, v. 27, no. 4, p. 40-69.

DESCRIPTORS: *Insects, Poland, Growth, Biology, *Parasites, Control.

The nut or thorn scale - Lecanium coryli (Linné) sensu Marchal (1908-1909) nec Sulc (1908, 1932) is one of the most common insects in Poland. It often appears in large numbers and becomes noxious to deciduous fruit, ornamental and forest trees and shrubs. (Author)

CHEMISTRY

JOURNAL OF APPLIED CHEMISTRY, 1942, VOL. 15, NO. 3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 8p. 18 refs.
Order from OTS or SLA $1.10 61-20334

Abstract trans. of Zhurnal Prikladnoi Khimii (USSR) 1942, v. 15, no. 3, p. 101-104, #128-150, 164-171, 173-181.
#Complete translations are available separately.

DESCRIPTORS: *Chemistry, *Bromine, Sources, Catalysis, Dehydrogenation, *Butenes, Butadienes, Reduction, Decomposition, *Cyclohexanes, High temperature research, Catalysts, Metals, *Anthracenes, Sulfonic acids, Solubility, Salts, *Fuels, Carbonization, Fluidized solids.

Contents:
Some new sources of bromine, by I. G. Druzhnin
#Catalytic dehydrogenation of butene to butadiene under reduced pressure, by A. A. Balandin and others
#Dehydrogenation and decomposition of cyclohexane at high temperatures over metallic catalysts, by A. A. Balandin and N. Z. Kotelkov
Investigation on derivatives of anthracene. V. Solubility of some salts of mono- and disulfonic acids of anthracene, by B. P. Fedorov and N. A. Lodygin
Thermal dissolution of solid fuels. I. Carbon-forming substances, by M. K. D'yakova and N. V. Melent'eva.

JOURNAL OF GENERAL CHEMISTRY, 1940, VOL. 10, NO. 19/20: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 11p. 10 refs.
Order from OTS or SLA $1.60 61-20394

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1940, v. 10, no. 19/20, p. 1784-1812.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, USSR, Hydrocarbons, Polymerization, Polycyclic compounds, Anthracenes, Synthesis, Ethyl radicals, Alcohols, Dehydration, Methyl radicals, Reaction kinetics.

Contents:
Kinetics and mechanism of thermal conversion of unsaturated hydrocarbons. VII. Kinetics of polymerization of unsaturated hydrocarbons under low pressures by the action of free radicals, by F. S. Romm
Synthesis of polycyclic compounds. IV. 9-ethyl-1, 2-benzanthracene and 9-ethyl-10-methyl, 1-2-benzanthracene, by B. M. Mikhailov and A. N. Blokhina
Dehydration of alcohols with two triple bonds and the products of the reaction, by Yu. S. Zal'kind and E. F. Zeberg.

JOURNAL OF GENERAL CHEMISTRY, 1943, VOL. 13, NO. 3: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 13p. 10 refs.
Order from OTS or SLA $1.60 61-20331

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1943, v. 13, no. 3, p. 131-158, 164-168, 175-188, 202-216, 230-241.
#Complete translations of p. 136-144, 184-188, 202-212 are available separately.

DESCRIPTORS: *Chemistry, Abstracting, Periodicals, Alcohols, Silicic acids, Acids, Esters, Butadienes, Synthesis, Urea derivatives, Ketones, Alkylation, Chloroprenes, Iodine, Bromine, Chemical reactions, Stilbenes, Hydrolysis, Vanadium, Catalysts, Ethyl radicals, Cyclopentanes, Pentanes.

Contents:
Contact synthesis of o-tolyl alcohol from crotonaldehyde and ethyl alcohol, by Yu. A. Gorin and K. N. Charskaya
#Intramolecular rearrangements in the aromatic series. III. Arylation and alkylation of aryl derivatives of urea, by G. I. Gershzon
Investigation of the sesquiterpene alcohol shairol from ferula pyramidata (kar. et kir) eug. kor. (syn F paniculata LDB) by N. P. Kir'yalov
Research on conjugated systems. XX. Interaction of chloroprene with iodine, by A. A. Petrov
Research on heterocyclic ketones. II. Alkylation, by E. I. El'kina and M. M. Shemyakin
Hydrolytic decomposition of carbon bonds. VI. Hydrolysis of substituted stilbenes, by M. M. Shemyakin and N. I. Oranskii
#Characteristics of semicyclic double bonds: Reaction of cyclohexylidene derivatives to some reagents capable of addition to ordinary double bonds, by D. N. Kursanov and A. S. Kursanova
#Mechanism of contact conversions on the vanadium catalyst. III. Contact conversions of ethylcyclopentane, by A. F. Plate and O. D. Sterligov
Synthesis of some chloro-ortho-esters of silicic acid, by Yu. N. Vol'nov and A. Mishelevich
Research on conjugated systems. XXI. Interaction of 1, 2-dichloro-1, 3-butadiene with hypobromous acid and alkyl hypoiodites. synthesis and properties of dichlorovinylethylene oxide and of 1, 2-dichloro-3-alkoxybutadienes, by A. A. Petrov
Research on conjugated systems. XXII. Order of addition of bromine to bromoprene. Synthesis and properties of 1, 2-dibromo-1, 3-butadiene, by A. A. Petrov

Gakhokidze, A. M.
THE CONTRIBUTION OF THE GEORGIAN SCIENTISTS TO THE DEVELOPMENT OF CHEMISTRY OVER A 40 YEAR PERIOD. 25 Sep 61 [9]p. JPRS: 10235.
Order from OTS or SLA $1.10 61-28604

Trans. of Zhurnal Obshchei Khimii (USSR) 1961 [v. 31] no. 6, p. I-VI.

DESCRIPTORS: *Chemistry, Chemical engineering, *Chemists, Scientific personnel, Personnel, USSR.

Analytical Chemistry

Geiger, Ernst and Wissler, Alfred.
OXY- AND HYDROCELLULOSES. III. THE QUANTITATIVE DETERMINATION OF CARBONYL GROUPS IN HYDROCELLULOSE. [1961] 13p. 28 refs.
Order from SLA $1.60 61-20487

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1945, v. 28, p. 1638-1647.

DESCRIPTORS: *Hydrocellulose, Cellulose, Cellulose chemistry, Carbonyl radicals, Molecular weight, Determination.

Gotta, A. and Seehof, H.
THE NESSLER REACTION AND ITS USE IN THE DETERMINATION OF NITROGEN IN COMMERCIAL FERROUS ALLOYS. [1961] [9]p. (3 figs. omitted) 6 refs.
Order from SLA $1.10 61-18463

Trans. of Zeitschrift für Analytische Chemie (Germany) 1942, v. 124, p. 216-226.

DESCRIPTORS: *Steel, *Iron alloys, *Nitrogen, Determination, Chemical reactions, Colorimetric analysis, Sodium compounds, Hydroxides.

By preliminary tests the conditions were verified which must be adhered to when using the Nessler reaction for accurate quantitative colorimetric determinations of ammonia. Based on these preliminary tests, a method was developed for the determination of nitrogen in ferrous alloys. In contrast to all previous methods, this new one does not include a distillation of ammonia, the nitrogen content of the dissolved steel sample being determined (after precipitation of the heavy metals by sodium hydroxide) by evaluation of the colour produced by Nessler's solution. (Author)

Novikova, E.N. and Petrova, L.N.
DE KWANTITATIEVE BEPALING VAN KETONEN DOOR OXIMVORMING (Determination of ketones by an oximation method). 13 p. 9 refs. MTWL: 442 (Text in Dutch).
Order from OTS or ETC $1.85 61-17047

Trans. of Zhurnal Prikladnoĭ Khimii (USSR), 1950, v. 23, no. 12, p. 1336-1343.

DESCRIPTORS: *Ketones, *Oximes, Determination.

Pribil, Rudolf.
COMPLEXOMETRIC TITRATIONS (CHELATOMETRY): SURVEY AND INTRODUCTION (Komplexometricke Titrace (Chelatometrie). I. Prehled a Uvodni Sdeleni). [1961] 40p. (foreign text included) 25 refs.
Order from SLA $3.60 61-20252

Trans. in manuscript of Chem[icke] Listy (Czechoslovakia) 1953, v. 47, p. 1173-1183.
Another trans. is available from SLA mi$2.40, ph$3.30 as 59-10980 [1958] 19p.

Portions of this report will not reproduce well.

DESCRIPTORS: Chemical analysis, *Chemical elements, Determination, Mixtures, Precipitation, *Titration, Reagents, Czechoslovakia, Cyanides, Solvent extraction, Dissociation, *Colorimetric analysis, Metals, *Complex ions, *Chemical indicators, *Dyes, Electrochemistry, *Ion exchange, Exchange reactions, Potassium, Aluminum, Chelate compounds.

For abstract see Technical Translations 2: 115, 1959.

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1958, VOL. 3, NO. 6. 1961, 280p. PL-480 AEC.
Order from OTS $3.75 AEC-tr-4454

Trans. of Zhurnal Neorganicheskii Khimii (USSR) 1958, v. 3, no. 6, p. 1273-1470.

DESCRIPTORS: *Chemistry, Periodicals, Inorganic substances, *Metallic compounds, Semiconductors, Materials, Lattices, Crystal structure, Alloys, *Complex compounds, Acetates, Hall effect, Chemical reactions, Synthesis, Salts, Solubility, *Radioactive isotopes, Gases, Impurities, Ions, Distribution, Solids, Liquids, Phase transitions, Iron, Organic solvents, Solvent extraction, Pyrolysis, Catalysts, Crystallization, Silicates, Platinum compounds, Melting, *Heavy element compounds, Thermodynamics, Viscosity, Density, Melting, Chemical analysis, Chemical equilibrium, Radioactive equilibrium, Nuclear reactions.

Contents:
A study of the reaction of formation of zirconium hydroxide, by I. V. Tananaev and M. Ya. Bokmel'der
Energy characteristics of certain semiconductors with zinc-blende structure (gallium and indium arsenides and antimonides) by B. F. Ormont
Zinc-lithium silicate luminophor activated by manganese, by M. A. Konstantinova-Shlezinger and others
Thermal decomposition of strontium, barium and lead selenates, by A. D. Selivanova and others
Carbonate and oxalatocarbonate complex compounds of plutonium (IV) by A. D. Gel'man and L. M. Zaitsev
Preparation of Cossa's salt, by A. A. Grinberg and Yu. N. Kukushkin
The synthesis mechanism of hexammine tetravalent platinum, by A. A. Grinberg and E. N. In'kova
Compounds of platinum with ethanolamine, III, by Kh. I. Gil'dengershel'
Amino derivatives of trimethylplatinum, by O. M. Ivanova and A. D. Gel'man
Trimethylthiocarbamide compounds of tetravalent platinum, by V. A. Golovnya and O. M. Ivanova
Heating curves of some cobaltiammines, by V. A. Lobanov and others
Complex formation of tetravalent cerium with acetate and oxalate ions II. Extraction of cerium from nitric acid solution, by N. S. Vagina
Contribution to the synthesis of cerimolybdic heteropolyacid, by Z. F. Shakhova and S. A. Gavrilova
Some slightly soluble salts of the heteropolyacids of germanium and silicon, by F. M. Perel'man and others
Viscosity and density of the system V_2O_5 - PbO, by V. L. Zyazev and O. A. Esin
Investigation of the binary system sulfur-selenium in the range of low selenium concentrations, by L. M. Lapina
An investigation into the equilibrium of the ternary system Ti - Al - Fe, II, by I. I. Kornilov and others
Refractometric study of reactions in solutions, by P. T. Danil'chenko and others
Investigation of the system uranyl nitrate-water-dibutyl ether. Solubility isotherm at 25°, by V. M. Vdovenko and I. G. Suglobova
Solubility polytherms of potassium and cesium tetrafluoroborates, by I. G. Ryss and I. S. Khordas
Some rules governing the crystallization of silicate melts, by I. S. Kainarskii and I. G. Orlova
Perchloric acid and its derivatives, by A. A. Zinov'ev and V. P. Babaeva
Phase diagrams of LiOH - LiCl and LiOH - NaOH systems, by N. A. Reshetnikov and G. M. Unzhakov
The determination of gaseous impurities in titanium by the constants of the crystal lattice, by N. V. Ageev and M. S. Model'
The problem of the distribution of ions between a solid and a liquid phase, by A. N. Kirgintsev
The extraction of iron with organic solvents using a radioactive isotope, by K. V. Troitskii
A study of complex formation in $NiSO_4$ - H_2SO_4 - H_2O system by methods of physicochemical analysis, by A. Ya. Deich
The acetates of zinc and beryllium, by K. N. Semenenko
Lanthanum acetate pentahydrate, by V. N. Maksimov and K. N. Semenenko
Hall effect diagram of molybdenum - tungsten alloy system, by N. V. Grum-Grzhimailo and D. I. Prokof'ev
Author and subject index.

Kaji, Keiji.
META-STABILITY OF GYPSUM SEMIHYDRATE IN MIXED ACIDS (H_3PO_4, H_2SO_4). Rept. no. 5 of Studies on the Preparation of Phosphoric Acid Solution by the Wet System. [1961] 22p. 5 refs.
Order from SLA $2.60 61-18681

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 1, p. 123-128.

Portions of this report will not reproduce well.

DESCRIPTORS: Acids, *Sulfuric acid, *Phosphoric acids, Solutions, Preparation, *Gypsum, *Hydrates, Stability, Measurement, Chemical reactions.

The meta-stability of gypsum semihydrate in mixed acids (H_3PO_4, H_2SO_4) of various concentrations was measured and the relationship between this meta-stability and the reaction conditions of phosphoric acid preparation by the wet method was studied.

Pang, Tai-en and Lung, Kiang.
STUDIES ON SILICIC ACID AND ITS SALTS: RATE OF GELATION AND MECHANISM OF POLYMERIZATION OF SILICIC ACID. [1961] [18]p. 14 refs.
WRA T. 2; [DSIR NLL] M3134.
Order from OTS or SLA $1.60 61-27606

Trans. of [Hua Hsüeh Hsüeh Pao] (Chinese People's Republic) 1957, v. 23, p. 90-98.

DESCRIPTORS: *Silicic acids, Acids, *Salts, *Gels, Polymerization, Hydrogen ion concentration.

The rate of gelation of silicic acid is determined over a wide pH range as shown in a graph of the relationship between pH and the log of gelation time. The shape of this curve, formed like a letter N, possesses both a maximum and a minimum, irrespective of the nature of acid used. With different acids, there is a difference in the positions of the maximum and minimum values and in the distance between these two points. The concentration of silicic acid ions increases gradually as the concentration of the added acid solution increases and these ions combine slowly with ions of hydrogen. The formation of gel from silicic acid by the process of gelation is not the same in acid as in alkaline solution. In alkaline solution, it is the combination of the original acid and one part of its negatively charged ion, and in acid solution the mode of gelation of the original acid depends upon pH values. (Author)

Perel'man, F. M.
EXTRACTION OF RUBIDIUM AND CESIUM FROM MINERALS AND ORES. 15 Sep 61 [43]p. 57 refs.
MCL-1225/1+2.
Order from OTS or SLA $4.60 61-28919

Unedited rough draft trans. of [Rubidii i Tsezii] (Rubidium and Cesium) n.p., 1960, p. 103-129.

DESCRIPTORS: *Minerals, *Ores, *Rubidium, *Cesium, Separation, Determination, Electrochemistry, Production.

The methods which have been used by different authors for separating these elements from impurities and from one another are discussed and evaluated.

Severin, Hans.
CONCERNING THE ABSORPTION SPECTRA OF SEVERAL WATER-CONTAINING SALTS OF ERBIUM. [1961] 23p. 22 refs.
Order from SLA $2.60 61-20037

Trans. of Annalen der Physik (East Germany) 1947, ser. 6, v. 1, p. 41-58.

DESCRIPTORS: *Erbium, *Salts, Spectrographic analysis, Infrared spectroscopy, Electron transitions.

Organic Chemistry

JOURNAL OF GENERAL CHEMISTRY, 1941, VOL. 11, NO. 7: [TABLE OF CONTENTS] AND SELECTED ABSTRACTS. [1961] 8p. 16 refs.
Order from OTS or SLA $1.10 61-20373

Abstract trans. of Zhurnal Obshchei Khimii (USSR) 1941, v. 11, no. 7, p. 523-526, 533-536, 567-572.

DESCRIPTORS: Synthesis, Chemistry, Chemical reactions, Abstracting, *Hydrocarbons, *Carbon compounds, *Oxides, *Ethylenes, *Methanes, Ketones, *Butadienes, Hydrogen compounds, *Bromides, *Magnesium compounds, Halides, *Acetals, *Chromium compounds, Phenyl radicals, *Butenes, *Molecular isomerism, Isomeric transitions, Methyl radicals, Alkyl radicals.

Contents:
Synthesis of isoolefins and isoparaffins with a quarternary carbon atom. II. Reaction between 1,1,3-trimethylbutadiene hydrobromide and alkyl magnesium halides, by R. Ya. Levina and Yu. B. Kagan
Isomerization of unsaturated hydrocarbons in contact with metal oxides. V. Isomerization of 4-phenyl-1-butene over chromium oxide, by R.Ya. Levina and E. M. Panov
Interaction of magnesium-organic compounds with acetals of ketones, by R. Ya. Levina and others.

Afanasev, B.N.
TOEPASSING VAN CHLOORAMINE VOOR KWANTITATIEVE BEPALING VAN ORGANISCHE VERBINDINGEN (Use of chloramine-T for quantitative analysis of organic compounds). 14 p. 5 refs. MTWL: 456. (Text in Dutch).
Order from OTS or ETC $1.85 61-17045

Trans. of Zavodskaya Laboratoriya (USSR) 1949, v. 15, no. 11, p. 1271-1276.

DESCRIPTORS *Organic compounds, Chemical analysis, *Chloramines.

Befles, R.G. and Postovskiĭ, I.Ya.
DE BEREIDING VAN NAPHTACEEN (Preparation of naphtacene). 7 p. 7 refs. MTWL: 461 (Text in Dutch)
Order from OTS or ETC $1.85 61-17026

Trans. of Zhurnal Obshcheĭ Khimii. (USSR) 1950, v. 20, no. 3, p. 518-521.

DESCRIPTORS: *Naphtacenes, Preparation.

Brodskiĭ, A.I., Chervyatsova, L.L., and Miklukhin, G.P.
OVER DE MOGELIJKHEID VAN TAUTOMERIE VAN TOLUEEN (Possibility of tautomerism of toluene). 7 p. 9 refs. MTWL: 441 (Text in Dutch).
Order from OTS or ETC $1.55 61-17046

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 76, no. 6, p. 843-845.

DESCRIPTORS: *Toluenes, Molecular isomerism.

Dann, O. and Hauck, G.
DESULFURIZATION OF 3,4-DIPHENYLTHIOPHENE COMPOUNDS WITH RANEY NICKEL. [1961] 9p.
Order from ATS $13.00 ATS-66N55G

Trans. of Arch[iv der] Pharm[azie] (West Germany) 1960, v. 293, no. 2, p. 187-194.

DESCRIPTORS: *Desulfurization, Sulfur, Separation, *Phenyl radicals, *Thiophenes, *Nickel.

Doladugin, A. I., Khmel'nitskii, Yu. L., and Guseva, A. V.
ALKYLATION OF BENZENE ON ALUMINOSILICATE CATALYSTS. [1961] 10p. 37 refs.
Order from OTS or SLA $1.10 61-20154

Trans. of Neftyanoe Khozyaistvo (USSR) 1946 [v. 24] no. 3/4, p. 44-53.

DESCRIPTORS: *Benzenes, *Propenes, Alkylation, *Alumina-silica catalysts, Catalysts, Catalysis, *Alkyl radicals, Thermodynamics, Chemical reactions, Pressure, Clays, Ethylenes.

On the basis of thermodynamical calculations for the reaction of alkylation of benzene with propene and for polymerization of propene preliminary conclusions were drawn pertaining to the effect of the temperature, pressure and benzene-propene ratio on the extent of conversion of propene. These conclusions were confirmed by a subsequent experimental study of the alkylation reaction. The highest yield of monoalkylbenzenes was obtained at 350° C and to amount ot 120-130% by weight on the olefins in the initial mixture of reactants. Increase of the proportion of benzene to olefins raises the yield of monoalkylated benzenes. At temperatures of 470-520° the direct addition of the initial olefins to benzene is accompanied by destructive alkylation. As a result, formation of toluene takes place at these temperatures, the yield of which reaches 15-16 weight % on the olefins charged. Alkylation of benzene with propene on activated clay from Tavtimanov field in the Bashkirian Republic gave a yield of monoalkylbenzenes as high as that obtained over a synthetic aluminosilicate under similar conditions. (Author)

Hocevar, B.
CHROMATOGRAPHIC ANALYSIS OF PHENOLS ON ACETYLATED PAPER. [1961] 7p.
Order from ATS $12.00 ATS-43N55SL

Trans. of Sloven[sko] Kemi[jsko] Drustvo. Vestnik (Yugoslavia) 1959, v. 6, p. 1-8.

DESCRIPTORS: *Chromatographic analysis, *Phenols, Paper chromatography.

Ide, F[umio] and Takayama, Y[uji].
GRAFT COPOLYMERIZATION OF METHYL METHACRYLATE ON CELLULOSE. [1961] 12p.
Order from ATS $20.45 ATS-55N55J

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 1, p. 213-218.
Another trans. is available from SLA $1.60 as 61-16540 [1961] 20p.

DESCRIPTORS: *Cellulose, *Acrylic resins, *Copolymerization, Polymers, Cellulose chemistry.

For abstract see Technical Translations 6: 397, 1961.

Imaev, M. G.
TRANSESTERIFICATION OF TRIALKYL PHOSPHITES WITH ALIPHATIC ALCOHOLS. [1961] 4p.
Order from ATS $6.35 ATS-00N55R

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1961, v. 31, no. 6, p. 1770-1773.

DESCRIPTORS: *Esterification, *Alkyl radicals, *Phosphites, *Alcohols, Chemical reactions.

Kargin, V. A., Kabanov, V. A. and others.
THE POLYMERIZATION OF ACETONITRILE AND OTHER NITRILES. [1961] 4p.
Order from ATS $6.60 ATS-25N55R

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139, no. 3, p. 605-607.

DESCRIPTORS: *Acetonitriles, *Nitriles, *Polymerization.

Klamann, D., Sass, C., and Zelenka, Maria.
THIONYL AMINES AND SULFINIC ACID AMIDES. [1961] 5p. 8 refs.
Order from SLA $1.10 61-20514

Trans. of Chemische Berichte (West Germany) 1959 [v. 92] no. 8, p. 1810-1813.

DESCRIPTORS: *Amines, *Sulfonyl radicals, *Sulfinic acids, *Amides, Synthesis, Chemical reactions, *Grignard reagents.

Thionylamines for under suitable conditions in good yields and form with a Grignard reagent not only sulfinic acid anilides, but also, sulfinic acid amides R'-SO-NH-R with an aliphatic or cyclo-aliphatic radical R and R'. (Author)

Koster, Roland and Bruno, Gunter.
EXCHANGE OF HYDROCARBON RADICALS BETWEEN ORGANIC ALUMINUM AND BORON COMPOUNDS. Pt. 33 of Metalloorganic Compounds; Rept. 3 of Boron Compounds. [1961] 23p. 35 refs.
Order from SLA $2.60 61-20456

Trans. of [Justus] Liebigs Ann[alen der] Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 89-103.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Boron compounds, *Alkyl radicals, *Hydrocarbons, Exchange reactions.

See also 61-20455

Koster, Roland and Kroll, Wolf-Rainer.
POTASSIUM CHLORIDE COMPLEXES OF DIALKYL ALUMINUM CHLORIDE AND THEIR CLEAVAGE. Pt. 31 of Metalloorganic Compounds. [1961] 4p. 4 refs.
Order from SLA $1.10 61-20454

Trans. of [Justus] Liebigs Ann[alen der] Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 50-52.

DESCRIPTORS: Metalorganic compounds, Complex compounds, *Aluminum compounds, *Potassium compounds, *Chlorides, *Alkyl radicals, Chemical reactions.

See also 61-20453

Kropachev, V. A., Dolgoplosk, B. A., and Nikolaev, I. N.
COMPLEX-FORMATION AND STRUCTURE OF THE CHAIN ON POLYMERIZATION OF 1,3-BUTADIENE WITH LITHIUM-BUTYL [Kompleksoobrazovanie i Struktura Tsepi pri Polimerizatsii Divinila Litiibutilom]. [1961] 5p. 6 refs.
Order from OTS or SLA $1.10 61-20629

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115, no. 3, p. 516-517.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-13317, CTS-477, July 58, 4p.

DESCRIPTORS: *Butadienes, Polymerization, Polymers, *Lithium compounds, *Butyl radicals, Organic compounds, *Oxygen, Alkyl radicals, *Sulfides, Additives, Chemical reactions.

For abstract see Technical Translations 3: 563, 1960.

Moulin, Fr.
RESEARCHES ON 1-BENZYL AND 1-PHENYL - SUBSTITUTED 1,2,3-TRIAZOLES. [1961] 10p. (experimental data omitted) 15 refs.
Order from SLA $1.10 61-20654

Trans. of Helvetica Chimica Acta (Switzerland) 1952, v. 35, p. 167-180.

DESCRIPTORS: *Azoles, Synthesis, Hydrogenation, Physical properties, Benzyl radicals, Phenyl radicals.

Natta, G., Porri, Lido, and Carbonaro, A.
CRYSTALLINE ORGANOMETALLIC COMPLEXES CONTAINING ALUMINUM AND COBALT HAVING STEREOSPECIFIC CATALYTIC PROPERTIES. [1961] 6p. 2 refs.
Order from SLA $1.10 61-18845

Trans. of Accad[emia] Naz[iona]l [e dei] Lincei. Classe [di] Sci[enze] Fis[iche] Mat[ematiche] e Nat[urali]. Rendiconti (Italy) 1960, v. 29 [no. 5] p. 491-496.
Another trans. is available from CTS (Chem) $9.60 as CTS (Chem)-221, 1961, 2400 words.

DESCRIPTORS: *Metalorganic compounds, *Complex compounds, *Aluminum compounds, *Cobalt compounds, Chemical reactions, Catalysts, Catalysis, Synthesis, Chemical properties.

A systematic study was made of the reaction between compounds of aluminum and compounds of cobalt. As a result of such work a crystallizable organometallic complex was obtained containing aluminum and cobalt capable of promoting the polymerization of 1,3-butadiene to 1,4-cispolybutadiene. This catalyst contains cobalt in the valence state of 1 and consequently is also of extreme interest outside the field of stereospecific polymerization; as for example in the stabilization of a lower valence state of a metal by means of coordination. In this introductory note we shall briefly describe the preparation of this complex and some of its chemical properties and its catalytic activity. (Author)

Neumann, W. P.
THE QUANTITATIVE DETERMINATION OF DIALKYL Al HYDRIDES. Pt. 29 of Metalloorganic Compounds. [1961] 16p. 14 refs.
Order from SLA $1.60 61-20452

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1960] v. 629, no. 1/3, p. 23-33.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrides, *Alkyl radicals, Quantitative analysis.

Two methods have been developed for the determination of Al-H bonds in aluminum organic compounds: a gas-volumetric method for routine analysis in the laboratory or in the plant and a spectrophotometric method of greater precision and sensitivity. (Author) (See also 61-20451)

Pfohl, W[erner].
TRINEOPENTYL ALUMINUM. Pt. 37 of Metalloorganic Compounds. [1961] 4p. 5 refs.
Order from SLA $1.10 61-20461

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 207-209.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Methyl radicals, *Pentyl radicals, *Alkyl radicals, *Butenes, Chemical reactions, Synthesis.

See also 61-20460

Poroshin, K. T., Kurgin, U. I., and Kozarenko, T. D.
CONCERNING THE AUTOCATALYTIC CHARACTER OF THE POLYCONDENSATION OF THE ETHYL ESTER OF GLYCINE IN THE PRESENCE OF CARBON DIOXIDE. Rept. 9 on The Kinetics and Chemical Affinity of the Polycondensation of the Esters of α-Amino-Acids and Peptides. [1961] 8p. 5 refs.
Order from OTS or SLA $1.10 61-20683

Trans. of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1959, no. 8, p. 1453-1457.

DESCRIPTORS: *Glycines, *Esters, *Ethyl radicals, *Amino acids, Acids, *Peptides, Condensation reactions, *Carbon dioxide, Catalysts, Catalysis.

The yield of peptides and diketopiperazine are measured in the products of the polycondensation of the glycine ethyl ester. The polycondensation of glycine ethyl ester is an autocatalytic process for the graduated growth of peptide chains. The growth of peptide chains takes place at a greater rate than the formation of new ones. Two stages of reaction were discovered in the polycondensation of the glycine ethyl ester. (Author)

Pudovik, A.N. and Arbuzov, B.A.
ADDITIE VAN DIALKYLFOSFIET AAN ONVERZADIGDE VERBINDINGEN. 1. ADDITIE VAN DIALKYLFOSFIET AAN β -β -DIMETHYLDIVINYLKETON (The addition of dialkyl phosphites to unsaturated compounds 1. The addition of dialkyl phosphites to 2, 2-dimethylvinyl vinyl ketone). 11 p. 3 refs. MTWL: 459 (Text in Dutch).
Order from OTS or ETC $1.85 61-17038

Trans. of Zhurnal Obshchef Khimii (USSR) 1951, v. 21, no. 2, p. 382-388.

DESCRIPTORS: *Phosphorous compounds, *Alkyl radicals, Vinyl radicals, Chemical reactions.

Rabinovich, B.Ya.
MOLECULAIRE VERBINDINGEN VAN ALUMINIUMBROMIDE MET AMMONIAK EN AROMATISCHE KOOLWATERSTOFFEN (Molecular compounds of aluminium bromide with ammonia and aromatic hydrocarbons). 12 p. 25 refs. MTWL: 451 (Text in Dutch).
Order from OTS or ETC $1.85 61-17040

Trans. of Zhurnal Obshchef Khimii (USSR) 1951, v. 21, no. 1, p. 66-73.

DESCRIPTORS: *Aluminium compounds, *Bromides, *Ammonia, *Carbohydrates, *Benzenes, Molecular association.

Rozlovskaya, S. I. and Temkin, M. I.
VAPOR PRESSURE OF MIXTURES OF VINYLIDENE CHLORIDE AND VINYL CHLORIDE. [1961] 4p. 1 ref.
Order from OTS or SLA $1.10 61-20160

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1946, v. 19, p. 30-34.

DESCRIPTORS: *Vinyl chlorides, Chlorides, Mixtures, Vapor pressure, Measurement.

Vapor pressures of vinyl chloride at from 20 to 60°C. and of vinylidene chloride within 20 and 90°C were determined and satisfactory agreement was established of the data for vinyl chloride with those reported in the literature. Vapor pressures of three mixtures of vinyl chloride with vinylidene chloride were determined within the temperature interval of 20 to 80°C and it was found that the vapor pressure of these mixtures can be calculated with sufficient approximation on the basis of the law of Raoult. (Author)

Sakakibara, A. and Araki, T.
SELECTION OF CATALYSTS FOR OBTAINING PHENOLS. Pt. 3 of Studies of the Hydrogenolysis of Lignin under High Pressure. [1961] 8p.
Order from ATS $16.25 ATS-57N55J

Trans. of Mokuzai Gakkaishi (Japan) 1961, v. 7, no. 1, p. 19-23.

DESCRIPTORS: *Phenols, Synthesis, *Catalysts, Catalysis, Lignin, Hydrogen, Pressure.

Wilke, Gunther and Muller, Herbert.
REACTIONS OF ORGANOALUMINUM COMPOUNDS WITH ACETYLENE. Pt. 39 of Metalloorganic Compounds. [1961] 25p. 18 refs.
Order from SLA $2.60 61-20468

Trans. of [Justus] Liebigs Ann[alen der Chemie] (West Germany) 1960, v. 629 [no. 1/3] p. 222-240.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, *Acetylenes, Chemical reactions.

See also 61-20462

Ziegler, Karl, Martin, Heinz, and Krupp, Felix.
ALUMINUM TRIALKYLS AND DIALKYL ALUMINUM HYDRIDES FROM ISOBUTYL ALUMINUM COMPOUNDS. Pt. 27 of Metalloorganic Compounds. [1961] 8p. 8 refs.
Order from SLA $1.10 61-20450

Trans. of [Justus] Liebigs Ann[alen der] Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 14-19.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrides, *Alkyl radicals, *Butyl radicals, Synthesis, Chemical reactions.

See also 61-20449

Ziegler, Karl, Gellert, Hans-Georg and others.
ALUMINUM TRIALKYLS AND DIALKYL ALUMINUM HYDRIDES FROM OLEFINS, HYDROGEN, AND ALUMINUM. Pt. 26 of Metalloorganic Compounds. [1961] 26p. 35 refs.
Order from SLA $2.60 61-20449

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 1-13.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrides, *Alkyl radicals, Synthesis, *Ethylenes, *Hydrogen, *Aluminum, Chemical reactions.

Ziegler, K[arl] and Gellert, H[ans]-G[eorge].
DETERMINATION OF THE "ACTIVITY" OF ORGANOALUMINUM COMPOUNDS. Pt. 28 of Metalloorganic Compounds. [1961] 5p. 5 refs.
Order from SLA $1.10 61-20451

Trans. of [Justus Liebigs] Annalen der Chemic (West Germany) 1960, v. 629, no. 1/3, p. 20-22.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Determination.

By "active" aluminoorganic compounds we understand Al trialkyls and Al dialkylhydrides. It is possible to determine them analytically, beside the inactive types of the R_2AlOR kind (which are formed, e.g., through autoxidation), by a simple titration method as only the active compounds are capable of fixing 1 mole of ammonia. (Author) (See also 61-20450)

Ziegler, Karl and Kroll, Wolf-Rainer.
DISPLACEMENT AND GROWTH REACTIONS IN DIALKYL Al COMPOUNDS OF THE R_2AlX TYPE. Pt. 35 of Metalloorganic Compounds. [1961] 8p. 4 refs.
Order from SLA $1.10 61-20459

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1960] v. 629, no. 1/3, p. 167-171.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Displacement reactions.

See also 61-20458

Ziegler, Karl, Kroll, Wolf-Rainer and others.
DISSOCIATION AND EXCHANGE REACTIONS OF THE ALUMINUM TRIALKYLS. Pt. 32 of Metalloorganic Compounds. [1961] 57p. 31 refs.
Order from SLA $5.60 61-20455

Trans. of [Justus Liebigs] Ann[alen] der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 53-89.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Exchange reactions, Dissociation.

See also 61-20454

Ziegler, Karl, Froitzheim-Kuhlhorn, Helga, and Hafner, Klaus.
METAL COMPOUNDS OF CYCLOPENTADIENE. Pt. 21 of Metallo-Organic Compounds. [1961] 12p. 18 refs.
Order from SLA $1.60 61-20291

Trans. of Chem[ische] Ber[ichte] (West Germany) 1956, v. 89, p. 434ff.

DESCRIPTORS: *Metalorganic compounds, Organic compounds, *Cyclopentadiene, Pentadienes, Sodium compounds, Calcium compounds, Carboxylic acids, Acids, Synthesis.

Various methods for the preparation of cyclopentadienylsodium are described. With sodium metal, cyclopentadiene reacts as an acid with evolution of hydrogen. With sodium in liquid ammonia, no hydrogen is given off; however, 1/3 of the cyclopentadiene is reduced to cyclopentene. Cyclopentadienylcalcium is formed easily from cyclopentadiene and calcium carbide with evolution of acetylene, if ammonia is present. Some organic bases act in a manner similar to ammonia. A new cyclopentadienedicarboxylic acid was discovered as the reaction product of carbon dioxide with cyclopentadienylsodium and cyclopentadienylcalcium. (Author) (See also 59-15940)

Ziegler, Karl, Koster, Roland and others.
NEW COMPLEX COMPOUNDS OF ALUMINUM ALKYLS. Pt. 30 of Metalloorganic Compounds. [1961] 29p. 13 refs.
Order from SLA $2.60 61-20453

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 33-49.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Chemical reactions, *Complex compounds, Synthesis.

See also 61-20452

Ziegler, Karl, Nagel, Konrad and Pfohl, Werner.
PYROLYSIS OF Al TRIALKYLS. Pt. 38 of Metalloorganic Compounds. [1961] 19p. 5 refs.
Order from SLA $1.60 61-20462

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 210-221.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Pyrolysis.

See also 60-20461

Ziegler, Karl, Krupp, Felix and others.
REACTIONS OF THE Al TRIALKYLS WITH CARBON DIOXIDE AND SULFUR DIOXIDE. Pt. 41 of Metalloorganic Compounds. [1961] 10p. 8 refs.
Order from SLA $1.10 61-20463

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1960] v. 629, no. 1/3, p. 251-256.

DESCRIPTORS: *Aluminum compounds, *Alkyl radicals, *Carbon dioxide, *Sulfur compounds, *Dioxides, Chemical reactions, *Carboxylic acids, *Sulfinic acids, Acids, Production, Metalorganic compounds.

See also 61-20480

Ziegler, Karl, Gellert, Hans-Georg and others.
REACTIONS OF THE Al-C BOND WITH OLEFINS. Pt. 34 of Metalloorganic Compounds. [1961] 74p. 50 refs.
Order from SLA $7.60 61-20458

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1-3, p. 121-166.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, *Ethylenes, Chemical reactions, Displacement reactions.

See also 61-20456

Ziegler, Karl, Krupp, Felix, and Zosel, Kurt.
SYNTHESIS OF ALCOHOLS FROM ORGANOALUMINUM COMPOUNDS. Pt. 40 of Metalloorganic Compounds. [1961] 15p. 24 refs.
Order from SLA $1.60 61-20480

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1-3, p. 241-250.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Oxidation, *Alcohols, Synthesis.

See also 61-20468

Ziegler, Karl, Gellert, Hans-Georg and others.
SYNTHESIS OF STRAIGHT-CHAIN α-OLEFINS FROM ETHYLENE. Pt. 36 of Metalloorganic Compounds. [1961] 42p. 24 refs.
Order from SLA $4.60 61-20460

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 172-198.

DESCRIPTORS: Metalorganic compounds, *Butenes, Synthesis, *Ethylenes, *Aluminum compounds, *Alkyl radicals, Chemical reactions, Displacement reactions, Catalysts, Catalysis.

See also 60-20459

Physical Chemistry

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1940, VOL. 27, NO. 9: [TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] 2p.
Order from OTS or SLA $1.10 61-20390

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S. 1940, v. 27, no. 9, p. 950-955.

DESCRIPTORS: *Scientific research, Periodicals, USSR, Substances, Liquids, Halogenation, Electrolytes.

Contents:
Method of electrolytic halogenation of substances insoluble in water, by N. A. Izgaryshev and V. S. Polikarpov

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1942, VOL. 35, NO. 2: [TABLE OF CONTENTS] AND SELECTED ABSTRACT. [1961] 1p.
Order from OTS or SLA $1.10 61-20314

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S. 1942, v. 35, no. 2, p. 38-41.

DESCRIPTORS: *Scientific research, Periodicals, USSR, Copper, Oxidization, Oxidizers, Chemical reaction.

Contents:
Mechanism of copper passivation in alkaline solutions of oxidizing agents, by A. G. Samartsev.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1943, VOL. 38, NO. 8. [1961] 1p.
Order from OTS or SLA $1.10 61-20300

Abstract trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1943, v. 38, no. 8, p. 270-276.

DESCRIPTORS: *Scientific research, Periodicals, USSR, Spectrophotometers, Design, Ethylene-amines, Potassium, Salts, Chemical reactions, Amines.

Contents:
Portable spectroscopic unit for analysis of cores from oil wells, by S.A. Borovik
Interaction of ethylenediamine with zeise salts, by Anna Gel'man.

Daniel-Bek, V. S., Mints, M. Z. and others.
INVESTIGATION OF FUEL CELLS WITH SOLID ELECTROLYTES [Issledovanie Toplivnykh Elementov s Tverdymi Elektrolitami]. [1961] 7p.
Order from ATS $11.95 ATS-58M45R

Trans. of mono. Trudy Chetvertogo Soveschaniya po Elektrokhimii [Conference on Electrochemistry (no. 4)] held at Moscow, 1-6 Oct 56, Moscow, 1959, p. 794-800.
Another trans. is available from OTS or SLA $1.60 as 61-19790, MCL-402/1, AD-255 376.24 Oct 60. [18]p

DESCRIPTORS: *Fuel cells, *Electrolytes, Materials, Tests, Temperature, Solids, Electric power production, Hydrocarbons, Benzenes, Electrochemistry.

For abstract see Technical Translations 6: 336, 1961.

Dubinin, M. M.
THEORY OF PHYSICAL ADSORPTION AND PRACTICAL APPLICATION OF ADSORBENTS (Teoriya Fizicheskoi Adsorbtsii i Prakticheskoe Primenenie Adsorbentov). 28 Sep 61 [17]p. (Summary in Armenian omitted). JPRS: 10225.
Order from OTS or SLA $1.60 61-28760

Trans. of Akademiya Nauk Armyanskoi SSR, Erevan. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1960, v. 13, no. 6, p. 377-383.

DESCRIPTORS: *Activated carbon, Carbon, Adsorption, *Adsorbents, Theory.

Dukhin, S. S. and Deryagin, B. V.
ELECTRICAL FIELD OF A MOVING DROPLET. I. THE THEORY OF THE ELECTRICAL FIELD OF A DROPLET CONTAINING AN IONOGENIC SURFACE-ACTIVE COMPOUND. 17 Aug 61 [21]p. 5 refs. MCL-1192/1+2.
Order from OTS or SLA $2.60 61-28533

Unedited rough draft trans. of #Kolloidnyi Zhurnal (USSR) 1959, v. 21, no. 1, p. 37-49.

DESCRIPTORS: *Drops, *Electric fields, Theory, Surfaces, Electrolytes, Adsorption, Diffusion.

Calculations on not excessively large droplets, the fall of which is characterized by Reynolds numbers less than unity, showed that the electrokinetic diffusion effect may lead to electrical fields of 100 volt/cm. (See also 59-13213)

Eichenauer, Walter, Künzig, Herbert, and Pebler, Alfred.
DIFFUSION AND SOLUBILITY OF HYDROGEN IN α-IRON AND SILVER. [1959] [13]p. 13 refs.
Order from SLA $1.60 61-20623

Trans. of Zeitschrift für Metallkunde (West Germany) 1958, v. 49, no. 5, p. 220-225.
Another trans. is available from BISI £3 10s as BISI-1238 [1959].

DESCRIPTORS: Metals, *Iron, *Silver, *Hydrogen, Diffusion, Solubility.

Freidin, B. G. and Tsyskovskii, V. K.
USE OF VARIOUS CATALYSTS IN THE OXIDATION OF PARAFFINS [Primenenie Razlichnykh Katalizatorov pri Okislenii Parafina]. [1961] [9]p. (4 figs. omitted) 11 refs. AERDL T-883; RIS E-639.
Order from OTS or SLA $1.10 61-28943

Trans. of [Khimiya i Tekhnologiya Topliv i Masel (USSR) 1959 [v. 4] no. 12, p. 25-29.
Another trans. is available from OTS or SLA $1.10 as 61-23241, DSIR LLU M. 2997 [1961] [10]p.; also available from RIS $17.50 as RIS E-639.

DESCRIPTORS: *Catalysts, Oxidation, *Hydrocarbons, Potassium compounds, Manganese compounds, Permanganates, Reaction kinetics.

Gramakov, S. D.
SOME PATTERNS OF BEHAVIOR IN THE FORMATION OF BINARY-SYSTEM CONSTITUTION DIAGRAM TYPES. [1961] 12p. 13 refs.
Order from OTS or SLA $1.60 AEC-tr-4523

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1950, v. 24, no. 6, p. 641-649.

DESCRIPTORS: *Alkali metals, *Chemical equilibrium, *Phase studies, Behavior, Metals, Stability, Salts, *Complex compounds, Lithium, Cesium, Chlorides, Bromides, Iodides.

The behavior pattern governing formation of the system type was found by comparing the constitution diagrams of binary systems containing salts of the alkali metals. This pattern, in turn, served as the basis for predicting the type of constitution diagram of systems still unexplored. Many of the predicted systems were investigated by the author. The experimental data positively confirm the existence of the behavior pattern we have discovered. The nature of the change in the type of constitution diagram can be explained by notions of the formation of coordination compounds. (Author)

Grube, G. and Speidel, H.
INFORMATION ON SiO. II. THE HEAT OF FORMATION OF GASEOUS SiO (Zur Kenntnis des Siliciummonoxyds. II. Die Bildungswärme des Gasförmigen Siliciummonoxyds). [1961] [10]p. (foreign text included) 4 refs.
Order from SLA $1.10 61-20272

Trans. of Zeitschrift für Electrochemie (West Germany) 1949, v. 53, no. 6, p. 341-343.

DESCRIPTORS: *Silicon compounds, *Monoxides, Heat of formation.

Hayashi, Katsumi.
SULFUR CONTAINING ACTIVE CARBONS. [1961] 19p. (8 refs. omitted)
Order from SLA $1.60 61-18695

Trans. of Kagaku to Kogyo, Osaka (Japan) 1960, v. 34, p. 473-477.

DESCRIPTORS: *Sulfur, Carbon, *Activated carbon, Chemical reactions, Desulfurization, Dehydrogenation, Synthesis, Physical properties, Adsorption.

The preparation and properties of sulfur containing carbons are reviewed.

Kamii, Ichiro and Yamabe, Takeo.
ELECTRODIALYSIS OF ORGANIC ACIDS, ORGANIC BASES, AND ALKALOIDS ACROSS ION EXCHANGE MEMBRANE. I. PERMEABILITY OF SULFURIC ACID, OXALIC ACID, CITRIC ACIDS, ANILINE, CAFFEINE, NICOTINE, BERBERINE, AND EPHEDRINE. [1961] [8]p. (foreign text included).
Order from SLA $1.10 61-20694

Trans. in manuscript of [Yakugaku Zasshi] (Japan) 1960, v. 80, no. 11, p. 1642-1644.

DESCRIPTORS: *Organic acids, Acids, *Alkaloids, Electrodialysis, *Sulfuric acid, *Oxalic acids, *Citric acids, *Anilines, *Caffeine, *Nicotine, *Berberine, *Ephedrine, Permeability, *Ion exchange resins.

Heterogeneous ion exchanger membranes were prepared and permeability of organic acids and bases, and alkaloids by electrodialysis across the membrane was examined. Electrodialysis was carried out with a cell consisting of 3~4 compartments, each compartment being 7 x 8.5 x 5 cm. in size, and platinum electrodes of 4 x 1.5 cm. in size at ca. 30 V. Oxalate ion disappeared from 0.1 N oxalic acid solution after 10 hours and from 0.1 N sodium oxalate solution after 3 hours. Citrate ion also showed similar behavior. Permeation of aniline, caffeine, berberine, ephedrine, and nicotine through the membrane was confirmed. Electrodialyses of the aqueous extracts of coptis, tobacco, cinchona, scopolia, and areca also proved the permeability of their alkaloids. (Author)

Kamii, Ichiro, Tanaka, Tatsu, and Yamabe, Takeo.
ELECTRODIALYSIS OF ORGANIC ACID[S], ORGANIC BASE[S] AND ALKALOID[S] ACROSS ION EXCHANGE MEMBRANE. II. PERMEABILITY OF QUININE. [1961] [9]p. (foreign text included).
Order from SLA $1.10 61-20695

Trans. in manuscript of [Yakugaku Zasshi] (Japan) 1961, v. 81, no. 6, p. 931-933.

DESCRIPTORS: *Organic acids, *Alkaloids, Electrodialysis, *Quinine, Permeability, *Ion exchange resins, Acids.

The transport behavior of quinine in electrodialysis across the membrane was particularly examined. The experiment was carried out at various pH's and current densities by the use of a five-compartment cell and following points were noted. Quinine has greater permeability through weak-acid than strong-acid cation exchange membrane. This permeability is maximum at about pH 3. An electrodialysis of acidic aqueous extract of cinchona bark containing 2.458 mg./cc., assuming all basic substances to be quinine, gives a solution which contains 4.741 mg./cc., of quinine at pH 3 with 1.67 A/dm^2 for one hour. (Author) (See also 61-20694)

Katchenkov, S.M.
DE OORSPRONG VAN ASVORMENDE BESTANDDELEN IN AARDOLIE (Origin of the ash components of petroleum). 7 p. 7 refs. MTWL: 460 (Text in Dutch).
Order from OTS or ETC $1.55 61-17039

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 76, no. 4, p. 563-566.

DESCRIPTORS: *Petroleum, Chemical elements, *Combustion.

Kishinevskiĭ, M.Kh. and Kerdivarenko, M.A.
KINETIEK DER ABSORPTIE VAN KOOLZUURGAS DOOR NATRONLOOGOPLOSSINGEN IN EEN MENGVAT MET PROPELLERROERDER BIJ HOOG TOERENTAL (The kinetics of the absorption of carbon dioxide by solutions of sodium hydroxide in a high-speed propeller agitator). 14 p. 1 ref. MTWL: 462 (Text in Dutch).
Order from OTS or ETC $1.85 61-17027

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1951, v. 24, no. 4, p. 413-420.

DESCRIPTORS: *Carbon dioxide, *Sodium compounds, *Hydroxides, Adsorption, Stirrers, Chemical reactions, Velocity.

Kitagawa, Mutsuo, Hayashi, Katsumi, and Kodama, Teruo.
STUDIES ON ACTIVE CARBONS ACTIVATED BY ZINC CHLORIDE. [1961] [16]p.
Order from SLA $1.60 61-18694

Trans. of Kagaku to Kogyo, Osaka (Japan) 1960, v. 34, p. 428-[443].

DESCRIPTORS: *Activated carbon, Carbon, *Zinc compounds, *Chlorides, Chemical reactions, Density, Porosity, Adsorption.

The zinc chloride activated carbons and the sulfur containing carbons were measured for their specific gravity by the immersion technique, using water, and their porosity was calculated from the amount of water vapor adsorbed at saturation, and the relationship between the bulk density and the liquid phase adsorption of these was investigated. The results obtained show that the true specific gravity increases as the temperature is raised or the activation time prolonged. The porosity has a maximum value for the 500° C carbon with the 900° C carbon having a similar value, for which the relationship with the true specific gravity is not clear. The prolongation of the time decreases the porosity. The bulk density on the other hand is inversely related to the porosity; however, the sulfur containing carbons show a greater true specific gravity than the ordinary carbons using the same activation conditions for both. The porosity and the bulk density increase in the same manner as the ordinary carbons. In the liquid phase adsorption the caramel adsorption is in a parallel relationship with the porosity, but the iodine and methylene blue adsorption increase as the activation temperature is raised, and to a much smaller extent with the porosity. The structure of the carbon for the zinc chloride activated carbons was discussed. (Author)

Kootz, Theo.
NITROGEN ABSORPTION OF IRON. Rept. no. 662 of the Steelworks Panel of the Verein Deutscher Eisenhüttenleute. [1961] 6p. 15 refs.
Order from SLA $1.10 61-20615

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 3, p. 135-137.
Another trans. is available from BISI £2 5s as BISI-1254.

DESCRIPTORS: *Iron, *Nitrogen, Absorption, Test methods, Steel, Corundum, Crucibles, Cast steel, Air, Oxygen, Chemical analysis, Metals, Slags, Aluminates, Calcium compounds, Oxides.

Increasing oxygen contents in the iron do not lead to any noticeable reduction in nitrogen saturation. Increasing oxygen contents in the gas used for nitrogen absorption scarcely influence the rate of nitrogen absorption, as long as the iron is low on oxygen. A direct functional relationship exists however between the rate of the nitrogen absorption and the oxygen content of the iron. (Author)

Kowalski, Jerzy and Roga, Blazej.
WOOD TAR, ITS PROPERTIES AND UTILIZATION (Smola Drzewna, Jej Wlasnosci i Przerob) tr. by K. Jurasz. 1961 [33]p. PL-480 Int.
Order from OTS $0.50 60-21278

Trans. of [Glowny Instytut Gornictwa. Komunikat] (Poland) 1950, no. 62, p. 1-37.

DESCRIPTORS: *Creosote, *Pitch, Oxidation, Solubility, Solvent extraction, Physical properties.

Kuznetsov, V. V.
CHANGE OF THE ELECTRICAL RESISTIVITY OF METALS DURING ELECTROLYTIC SATURATION WITH HYDROGEN. June 60 [10]p. (5 figs. omitted) 15 refs. [DSIR LLU] M 3153.
Order from OTS or SLA $1.10 61-27515

Trans. of #Zhur[nal] Prikl[adnoi] Khim[ii] (USSR) 1960, v. 33, no. 3, p. 628-632.

Portions of this report will not reproduce well.

DESCRIPTORS: Absorption, Sulfuric acid, Solids, Solutions, *Hydrogen, Molecular structure, Penetration, *Metals, Electrolysis, Electrolytes, Cathodes, Polarization, Measurement, *Electrical conductance, *Resistance, Electrochemistry.

Experiments established that the electrical resistivity of metals capable of absorbing small quantities of hydrogen steadily increases after cathodic polarization in sulphuric acid. The change in the electrical conductivity of metals during cathodic saturation with hydrogen is due to the formation of a hydrogen solid solution in metal and liberation of molecular hydrogen in voids. In the case of Monel, the effect of these two causes of increased resistivity are approximately equal. The methods of electrical conductivity measurement can be successfully employed for investigating the phenomenon of hydrogen penetration into metals during electrolysis.

Nasser, Gerhard and Scholz, Werner.
NITROGEN ABSORPTION DURING AIR-REFINING.
Rept. no. 663 of the Steelworks Panel of the Verein Deutscher Eisenhüttenleute. [1961] 10p. 9 refs.
Order from SLA $1.10 61-20617

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 3, p. 137-140.
Another trans. is available from BISI £3 10s as BISI-1255 [1959].

DESCRIPTORS: *Nitrogen, Absorption, *Steel, Processing, Chemical reactions, Oxygen, Metals, Oxides, *Iron compounds, Gases, Chemical analysis Melting, Reduction, Surface tension.

The rate of the nitrogen absorption of mild steel with nitrogen/oxygen gaseous mixtures containing from 0 to 20% O_2 was measured to answer the question, how high or low nitrogen containing steel could be produced with normal blast refining. These gas mixtures, which appear in the converter at definite distances from the converter bottom were introduced in the experiments into the bath of a vacuum induction furnace. Changes in the composition of the gas during the nitrogen absorption were thereby ruled out. The nitrogen absorption rate falls appreciably with increasing oxygen contents in the refining gas. Tests with pure nitrogen showed that the nitrogen absorption is also markedly reduced by the ferrous oxide content of the mild steel. As the same final nitrogen contents were reached, a chemical reaction between the ferrous oxide in solution and the nitrogen is ruled out. (Author)

Pertsov, N. V. and Rebinder, P. A.
SURFACE ACTIVITY OF LIQUID METAL COATINGS AND THEIR EFFECT ON METAL STRENGTH (O Poverkhnostnoi Aktivnosti Zhidkikh Metallicheskikh Pokrytii i Ikh Vliyanii na Prochnost' Metallov).
21 July 61, 5p. (1 fig. omitted) 12 refs. H-9320; JPRS (R-1764-D).
Order from OTS $0.50 61-31643

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 123, no. 6, p. 1068-1070.
Another trans. is available from CB $5.00.

DESCRIPTORS: *Liquid metals, *Metal coatings, *Coatings Effectiveness, *Metals, Thin films, Adsorption, Diffusion, *Heat resistant alloys, Chemical analysis, Wetting agents, Fluidized solids, Fused materials, Surface tension, Grains (Metallurgy), Single crystals.

The presence, in the fusibility diagram, of a sufficiently narrow but quite finite region of solid solution formation always corresponds to a lowering of the strength of the hard metal under the action of the liquid coating. This refers, of course, to that portion of the diagram where the concentration of the metal coating is small. A wide region of formation of a solid solution of the metal coating in the tested metal corresponds to the complete absence of a reduction in strength. (Extracted)

Rahmel, A. and Engell, H. J.
THE INFLUENCE OF OXYGEN PRESSURE ON THE OXIDATION RATE OF PURE IRON. Oct 61.
Order from BISI £3 BISI-2211

Trans. of Arch[iv für das] Eisenhütt[enwesen] (West Germany) 1959, v. 30, Dec, p. 743-746.

DESCRIPTORS: *Oxygen, Oxidation, *Iron, Pressure, Chemical reactions, Reaction kinetics.

Schulze, Dietrich.
PREPARATION, PROPERTIES, AND USES OF SILICON MONOXIDE. [1961] 16p. 42 refs.
Order from SLA $1.60 61-20516

Trans. of Chemische Technik (East Germany) 1956, v. 8, no. 6, p. 341-346.

DESCRIPTORS: *Silicon compounds, *Monoxides, Synthesis, Physical properties, Thermochemistry.

Stöber, W. and Arnold, M.
ANOMALIES AT THE DETACHMENT OF SILICIC ACID FROM THE SURFACE OF FINE-GRAINED SILICON-DIOXIDE POWDER. [1961] 12p. (11 figs. omitted) 18 refs.
Order from SLA $1.60 61-18847

Trans. of Kolloid-Zeitschrift (West Germany) [1961] v. 174, no. 1, p. 20-27.

DESCRIPTORS: *Silicic acids, Separation, *Powder metals, *Silicon compounds, *Dioxides, Solutions, Grains (Metallurgy), Powders.

The increased initial solubility of the silicon dioxide occuring with aqueous suspensions of fine-grained silicon-dioxide powders has been investigated on amorphous and crystalline powder-specimens. It has been found that silicic acid goes into solution with an initially-increasing velocity in a quantity greater than is to be expected on the assumption of an easily-soluble monomolecular-layer of silicic acid adsorbed on the SiO_2 surface. The increased initial solubility is connected with the Thomson-Gibbs effect, through which there is brought about an increased solubility of particles of diameter smaller than 0.1 micron and

at fracture-edges and corners with a sufficiently-acute curvature-radius. At this the deformation of some of the crystal-structures occurring at the grinding of quartz play a subordinate role. They result in increases in the initial velocity which are only small and which obviously die out only slowly, and which are extensively masked by the Thomson-Gibbs effect. (Author)

Tanaka, Ikuzo.
RECENT TRENDS IN PHOTOCHEMICAL RESEARCH. [1961] 23p. (3 figs. omitted) 35 refs.
Order from SLA $2.60 61-18841

Trans. of Kagaku (Japan) 1957, v. 27, no. 9, p. 451-456.
Another trans. is available from SLA mi$2.70, ph$4.80 as 59-15088, May 58, 25p.

DESCRIPTORS: *Ultraviolet radiation, *Photochemical reactions, *Photochemistry, Ionization potentials, Mass spectroscopy, Chemical reactions.

Usmanov, A. G. and Berezhnoi, A. N.
GENERALIZATION OF EXPERIMENTAL DATA ON THERMAL DIFFUSION OF GASES, tr. by B. W. Kuvshinoff. 6 Sep 61, 7p. 8 refs. APL/JHU TG 230-T248.
Order from OTS $0.50 61-31627

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1960 [v. 3] no. 1, p. 8-13.

DESCRIPTORS: *Experimental data, *Thermal diffusion, *Gas diffusion, Gases, Diffusion, Separation, Mixtures, Chemical analysis, Temperature, Heat transfer, Thermodynamics, Thermochemistry.

The relative separation of a binary gas mixture during thermal diffusion is described by the equation

$$\frac{\Delta\lambda}{\Delta\lambda_{\Delta S}} = 1,98;\quad \frac{S_1 - S_2}{R},$$

which makes it possible to determine with sufficient accuracy the thermal diffusion separation and other related values for gas mixtures in a wide range of temperatures and composition. (Author)

Vlcek, B. and Vlckova, S.
DIFFUSION OF SENSITIZING DYES IN GELATIN. [1961] 10p. 7 refs.
Order from SLA $1.10 61-20062

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 187-194 (original article in Czechoslovakian).

DESCRIPTORS: *Gelatin, *Dyes, Diffusion, Sensitivity, Silver compounds, Bromides, Adsorption.

A simple method is presented for measuring the diffusion of sensitizing dyes in gelatin. It is confirmed that the Fick diffusion law is fulfilled in the case of twelve sensitizing dyes. Therefore, substantial differences were established for coefficients of diffusion. The effect of surface-active agents and couplers on the diffusion of sensitizing dyes and the relationship between the diffusion of sensitizing dyes and their adsorption on silver bromide were investigated.

Vol'kenshteĭn, F.F.
DE INVLOED VAN DE TOEVOEGING VAN KLEINE HOEVEELHEDEN VAN EEN VREEMD BIJMENGSEL OP DE KATALYTISCHE ACTIVITEIT VAN IONAIRE KATALYSATOREN (Effect of small quantities of impurities on the catalytic activity of ionic catalysts). 26 p. 2 refs. MTWL: 454 (Text in Dutch).
Order from OTS or ETC $2.37. 61-17043

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1950, v. 24, p. 1068-1082.

DESCRIPTORS: *Catalysts, *Ionization, Chemical impurities, Theory.

Wolf, F. and Korn, R.
CATALYSTS FOR THE CATALYTIC OXIDATION OF HYDROCHLORIC ACID. [1961] 3p.
Order from ATS $4.50 ATS-62N54G

Trans. of German patent 1,078,100, by VEB Farbenfabrik Wolfen, Wolfen (Kr. Bitterfeld), filed 23 Dec 58, pub. 15 Sep 60.

DESCRIPTORS: *Hydrochloric acid, Oxidation, *Catalysis, Catalysts, Acids.

Yokota, N. and Tokuda, S.
KWIKSPREIDING IN EEN ELECTROLYTISCHE CEL BIJ DE ZOUTOPLOSSINGS KWIK METHODE VAN HET TYPE "FALLING FILM" (Dispersion of mercury in an electrolytic cell at the salt solution mercury method of the type "falling film"). tr. by A. Schouten. 5 p. MTWL: 967 (Text in Dutch).
Order from OTS or ETC $1.55 61-17048

Trans. of Japanese patent application no. 7547, 1957, Patent no. 2661, 1959, by N.V. Osaka Soda, filed 29 March 1957, pub. 20 Apr. 1959.

DESCRIPTORS: Mercury, *Electrolytic cells.

Zel'dovich, Ya.B.
BIJDRAGE TOT DE THEORIE VAN DE VOORTPLANTING VAN FLAMMEN (Theory of propagation of flames). tr. by G.J.M. Fritchy. 30 p. 16 refs. MTWL: 467 (Text in Dutch).
Order from OTS or ETC $2.45 61-17032

Trans. of Zhurnal Fizicheskoĭ Khimii (USSR) 1948, v. 22, p. 27-48.

DESCRIPTORS: *Flame propagation, Theory.

EARTH SCIENCES

LITERATURE ON METEOROLOGY, HYDROLOGY AND OCEANOGRAPHY PUBLISHED IN 1960: 1 BOOKS AND PAMPHLETS. 2. ARTICLES IN JOURNALS AND COLLECTIONS. 10 July 61 [11]p. 102 refs. JPRS: 9652.
Order from OTS or SLA $1.60 61-27198

Trans. of Meteorologiya i Gidrologiya (USSR) 1961, no. 1, p. 61-64.

Portions of this report will not reproduce well.

DESCRIPTORS: *Meteorology, *Hydrology, *Oceanography, Bibliography.

Davyidov, L. K.
HYDROGRAPHY OF THE USSR, VOL. 2, CHAP. 11: THE WESTERN PART OF THE KARA SEA BASIN, tr. by B. M. Kassell. [1961] [99]p. (8 figs. omitted) 8 refs. H-6346 B.
Order from OTS or SLA $8.60 61-28072

Trans. of mono. Gidrografiya SSSR, v. 2, Leningrad, 1955, chap. 11, p. 321-389.

Portions of this report will not reproduce well.

DESCRIPTORS: *Kara Sea, Water, Minerals, Chemical analysis, Siberia, *Hydrology, *Hydrographic surveying, Mountains, Permafrost, Geodetic data, Estuaries, *Arctic regions, Inland waterways, Swamps, *Geography, Drainage, Water supplies, Ice, Soils, Inorganic substances, Trees, Sand, Rock, *Oceanography.

Rossolimo, L. L.
THE GEOGRAPHY OF THE INLAND WATERS OF THE USSR: [SELECTED PARTS]. 14 Sep 61, 36p. (10 figs. omitted) 9 refs. H-9310.
Order from OTS $1.00 61-31668

Trans. of mono. Ocherki po Geografii Vnutrennikh Vod SSSR, Moscow, 1952, p. 127-177 and 283-285.

DESCRIPTORS: *Inland waterways, *Geography, *Hydrology, Marine biology, Aquatic animals, Animals, USSR.

Contents:
The Ob' River
The Yenisey River
Lakes of Central Asia

Surazskii, D. Ya.
A RECORDING ANEMOMETER WITH PROPELLER TRANSMITTER. 12 July 60 [11]p. (10 figs. omitted) 3 refs. Trans. no. 68; [DSIR LLU] M. 2726.
Order from OTS or SLA $1.60 61-23339

Trans. of Nauc[hno]-Issled[ovatel'skii] Inst[itut] Gidromet[eorologicheskogo] Priborost[roeniya]. T[rudy] (USSR) 1959, no. 8, p. 11-22.

DESCRIPTORS: *Anemometers, Design, Construction, Tests, Aerodynamics.

Experimental investigations and calculations concerning the various elements and units of the wind-measuring block with a propeller (screw) transmitter, showed that a 3-bladed propeller air screw with a constant pitch of 60° with a blade span 190-mm long should be used. The aerodynamic torque of the propeller exceeds the value of the Robinson cross with 3 cups used in the Type M-48 recording anemometer, which guarantees a reduction in the value of the starting speed during a prolonged period and use of the apparatus under natural conditions. The aerodynamic profile of the assembly as a whole with the tail-piece, which has two stabilizing fins, guarantees a steady direction in the wind current, without a marked bump for a gust in that direction lasting not less than 1 second. The compactness of the wind-recording assembly, with a propeller transmitter and electrical elements of a distance self-synchronous transmission with magnesyns, ensures the highly useful qualities of the instrument. The sensitiveness of the propeller in practice is not changed by the divergence of its axis relative to the airstream within the limits ±15°.

Geodesy

Shishkin, V. N., ed.
INSTRUCTIONS ON TRIANGULATION OF THE FIRST, SECOND, THIRD AND FOURTH ORDER. [1961] [322]p. ACIC G-5.
Order from OTS or SLA $19.75 61-28845

Trans. of mono. Instruktsiya po Triangulyatsii 1, 2, 3, i 4, Moscow, 1957, 308p.

DESCRIPTORS: *Geodesics, *Geodetic data, Instrumentation, Test methods, *Geodetic astronomy, Signals, Towers, Construction, USSR, Instruction manuals.

Contents:
The preparation of project plans and the reconnaissance of triangulation stations
Basic requirements for the construction of geodetic signals and types of triangulation marks
The inspection and testing of instruments
The measurement of horizontal directions or angles at first, second, third, and fourth-order triangulation stations
Base-line measurement
Astronomical determinations
Astronomical-gravimetric leveling
The field record books
Appendices.

Solov'ev, A. D.
CHANGES IN THE ELEVATIONS OF PRECISE LEVELING MARKERS AND BENCH MARKS IN THE CITY OF SARATOV. [1961] [19]p. 3 refs. ACIC RR-22.
Order from OTS or SLA $1.60 61-28839

Trans. of Sbornik Statei po Geodezii (USSR) 1953, v. 4, p. 43-55.

DESCRIPTORS: *Geodesies, *Geophysical prospecting, Urban areas, USSR.

Geology

INTERNATIONAL GEOLOGY REVIEW, VOL. 2, NO. 10, Oct 60, 1v. 126 refs.
Order from AGI $5.00, $55.00/year

Trans. of Ti Chih Hsueh Pao (Chinese People's Republic) 1956, v. 36, no. 4, p. 535-543; Sovetskaya Geologiya (USSR) 1958, no. 7, p. 138-147; 1958, no. 8, p. 114-136; Prikladnaya Geofizika (USSR) 1958, no. 19, p. 230-244; 1959, no. 23, p. 193-201; 226-233; Nauchno-Issledovatel'skii Institut Geologii Arktiki. Informatsionnyi Byulleten' (USSR) 1959, no. 16, p. 30-36; and mono. Jubilee Publication in the Commemoration of Professor Jun Suzuki, M. J. A. Sixtieth Birthday, Hokkaido U., 1958, p. 1-16 and 287-298.

DESCRIPTORS: *Geology, Periodicals, China, Manganese, Deposits, Ores, Petroleum, Gamma ray spectrometers, Rock, Gamma rays, Boreholes, Neutrons, Generators, Construction, Uranium, Thorium, Radium, Migration length, Mountains, Antarctic regions, Geological survey.

Contents:
Preliminary study of the manganese deposits of China, by Chao Chia-hsiang and Liu You-hsin
Geological structure of the South Khingan manganese deposit and essential composition of its ores, by M. V. Chebotarev
Use of differential gamma spectrometry in petroleum geology, by G. A. Nedostup and others
The spectrum of scattered gamma radiation in rock strata of various mineralogical compositions, by E. M. Fillippov
Some problems in the construction of a bore hole neutron generator, by E. A. Abb and others
Determination of coefficients of radioactive equilibrium as a method of study of the migration of uranium, ionium, and radium, by V. I. Malyshev
Geologic reconnaissance of the eastern part of the mountains in Queen Maud Land, Antarctica, by M. G. Ravich and others
On the ages of metamorphism in the Japanese Islands, by Masao Minato
Alkalic rocks of the Nemuro Peninsula with special reference to their pillow lavas, by Kenzo Yagi
Reference section.

Dav, V. N.
MATERIALS FOR THE STUDY OF GEOLOGY AND PETROGRAPHY OF THE OBRUB FORMATION OF APATITE. Feb 61 [21]p. 11 refs. RTS 1714.
Order from OTS or SLA $2.60 61-19099

Trans. of Akademiya Nauk SSSR. Laboratoriya Geologii Dokembriya. Trudy, 1959, v. 8, p. 353-369

DESCRIPTORS: *Apatite, *Geology, *Minerals, Ores, *Rock, Classification.

This article deals with data appertaining to the geology, petrography and mineralogy of one of the Buriat formation of apatite synchronous with the Precambrian rock formation of the Khamar-Daban ridge. The genesis of the formation is discussed. The work on the formation was carried out in 1954-55. (Author)

Gerasimovskii, V. I.
THE GEOCHEMISTRY OF RARE EARTH ELEMENTS. 22 Aug 60, [22]p. (2 figs. omitted).
Order from OTS or SLA $2.60 61-15965

Trans. of Priroda (USSR) 1959 [v. 48] no. 6, p. 19-26. Another trans. is available from AGI $5.00.

DESCRIPTORS: *Rare earth elements, Rare earths, *Minerals, Chemical elements, *Geochemistry.

Petrascheck, W. E.
THE FORMATION OF GREEK MAGNESITE DEPOSITS. Oct 61.
Order from BISI £3 10s BISI-2390

Trans. of Radex-Rund[schau] (Austria) 1961, Aug., p. 641-646.

DESCRIPTORS: *Magnesium compounds, *Carbonates, *Ores, Geophysical prospecting

Tschoepke, R.
TYPICAL FEATURES OF THE PRECAMBRIAN QUARTZ-BANDED ORES OF THE NORTHERN LABRADOR TROUGH IN CANADA AND THEIR ROLE IN THESE FORMATIONS. Oct 61.
Order from BISI £3 5s BISI-2396

Trans. of Techn[ische] Mitt[eilungen] Krupp (West Germany) 1961, v. 19, no. 2, p. 73-77.

DESCRIPTORS: *Ores, *Quartz, Iron, Geophysical prospecting, Canada, Geology.

Oceanography

Mokievskaya, V. V.
THE PROBLEM OF THE GEOCHEMISTRY OF IRON IN SEA WATER. Summary of a Bibliography. [1961] 15p. 10 refs.
Order from OTS or SLA $1.60 61-19562

Trans. of [Akademiya Nauk SSSR. Institut Okeanologii. Trudy, 1959, v. 33 [p. 114-125].

DESCRIPTORS: *Geochemistry, *Iron, *Sea water, Aquatic animals, Plants, Microorganisms, Sedimentation, Marine biology, Oceanography.

Paul'son, O[tto Mikhailovich].
STUDIES ON CRUSTACEA OF THE RED SEA WITH NOTES REGARDING OTHER SEAS, PT. 1: PODOPHTHALMATA AND EDRIOPHTHALMATA (CUMACEA) tr. by Francis D. Por. 1961, 164p. 14 refs. PL-480 Smi.
Order from OTS $1.75 60-21821

Trans. of mono. Issledovaniya Rakoobraznykh Krasnogo Morya s Zametkami Otnositel'no Rakoobraznykh Drugikh Morei, Chast 1: Podophthalmata i Edriophthalmata (Cumacea) Kiev, 1875 [145p.].

DESCRIPTORS: *Crustacea, Red Sea, Marine biology, Aquatic animals.

ENGINEERING

Aeronautical Engineering

Becker, E. and Fontaine, I. P.
CONSTRUCTION OF A PRESTRESSED CONCRETE TAXIWAY AT ORLY AIRPORT. [1961] 13p.
Order from SLA $1.60 61-18991

Partial trans. of Travaux (France) 1955, v. 39, no. 248, p. 499-515.

DESCRIPTORS: Airports, *Runways, Design, Construction, *Concrete, Materials.

Duyster, H. C.
THE CONSTRUCTION OF AIRCRAFT HANGARS WITH SPANS OF 164 FT. AND 377 FT. IN PRESTRESSED CONCRETE AT THE MELSBROEK AIRFIELD NEAR BRUSSELS. [1961] 32p. 3 refs.
Order from SLA $3.60 61-18999

Trans. of de Ingenieur (Netherlands) 1949, v. 61, no. 18, p. BT37-BT48.

DESCRIPTORS: *Hangars, Construction, Materials, Design, Concrete, Landing fields, Belgium.

Tzschentke, W.
THE COMPACTING OF CONCRETE BY INTERNAL VIBRATORS DURING THE BUILDING OF THE RUNWAY SURFACE AT MUNICH-RIEM AIRPORT. [1961] 4p.
Order from SLA $1.10 61-18933

Trans. of Strasse und Autobahn (West Germany) 1951, v. 2, no. 8, p. 250-252.

DESCRIPTORS: *Runways, Airports, Materials, *Concrete, Construction, *Vibrators.

Chemical Engineering

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS OF THE USSR. 11 Oct 61 [10]p. JPRS: 10503.
Order from OTS or SLA $1.10 61-28876

Trans. of Khimicheskaya Promyshlennost' (USSR) 1961, no. 5, p. 70-73.

DESCRIPTORS: Scientific personnel, Personnel, Scientific organizations, *Chemical industry, Automation, Sodium compounds, Hydroxides, Production, USSR.

Contents:
The preparation of the chemical industry for the XXII Party Congress, by L. A. Sheftil'
All-Union Conference on the Automation of Calcinated Soda Production, by S. V. Kuznetsov
The Automation Section of the Scientific Technical Council of the State Chemical Committee, by A. L. Leonov.

D'yakova, M. K. and Tsitron, I. L.
THERMAL SOLUTION OF SADKI ASPHALTITES AS A METHOD OF PREPARATION OF ARTIFICIAL LIQUID FUEL. [1961] 6p. 2 refs.
Order from OTS or SLA $1.10 61-18894

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, p. 740-744.

DESCRIPTORS: *Asphalt, Solutions, Petroleum, Fractionation, Distilling plants, Gasoline, *Fuels, Fuel oil, Chemical reactions, Coke, Vanadium, Metallurgy, Solvent extraction, Gases.

Laboratory batch experiments of thermal solution of Sadki asphaltite in solvents consisting of petroleum solar oil, of the 250-360° fraction of the products of dry distillation of Sadki asphaltite or the latter solvent after reclaiming, showed that under optimal conditions, i.e., 430-440°, duration of from 15 to 30 minutes, a pressure of 25-30 atm. and a 1:1 weight ratio of solvent to asphaltite, 30 per cent crude gasoline with 230° end point, up to 56 per cent coke and 8-10 per cent gas can be obtained by this method. A simple process is suggested for the conversion of Sadki asphaltite to motor fuel, with consideration of extraction of vanadium as a valuable by-product. (Author)

Ernst, Rudolf.
MECHANISM OF HEAT TRANSFER ON HEAT EXCHANGERS IN A FLUIDIZED BED (TURBULENT FLOW) (Der Mechanismus des Wärmeuberganges an Wärmeaustauschern in Fliessbetten (Wirbelschicten)). [1961] [32]p. (15 figs. omitted) 19 refs.
Order from SLA $3.60 61-20483

Trans. of Chemie Ing[enieur] Techn[ik] (West Germany) 1959, v. 31, no. 3, p. 166-173.

DESCRIPTORS: *Fluidized solids, *Heat transfer, Turbulent flow, *Heat exchangers, Gases, Pressure.

The connection between heat transfer and movement of solid particles was investigated for a fluidized bed and a moving bed. The mechanism of heat transfer in fluidized beds is this: The contact time of solid particles on a heated surface determines the heat transfer coefficient; it increases with decreasing contact time and tends toward an optimum value. The latter is limited by the existence of a gas layer between the transfer surface and the granulated solid particles. Contrary to an often advanced opinion, the gas velocity does not directly influence the transfer. Further, there is presented a report concerning tests in which the seldom investigated influences in fluidized beds were varied, for example, gas pressure and gas distribution, as well as circulation of solid material. (Author)

Itkina, E. S.
OCCURRENCE OF COPPER IN OIL FIELD WATERS. [1961] 1p.
Order from OTS or SLA $1.10 61-20315

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 35, no. 5, p. 149-152.

DESCRIPTORS: *Geochemistry, *Copper, Determination, Oils, Water.

Kussakov, M. M., Rebinder, P. A., and Zinchenko, K. E.
SURFACE PHENOMENA IN PETROLEUM FILTRATION PROCESSES. [1961] 1p.
Order from OTS or SLA $1.10 61-20388

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S. 1940, v. 28, no. 5, p. 433-437.

DESCRIPTORS: *Petroleum, Processing, Surface properties.

Smirnov, N.I. and Rubin V.L.
RELATIEVE TRANSPORTSNELHEID VAN DRUPPELS IN HET OVERGANGSGEBIED (Relative velocities of motion of drops in the field of transition). 9 p. 4 refs. MTWL: 465 (Text in Dutch).
Order from OTS or ETC $1.55 61-17030

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1951, v. 24, no. 1, p. 47-55.

DESCRIPTORS: *Drops, *Velocity, Reynolds number.

Steenbeck, Max.
PRODUCTION OF AN AUTOMATICALLY CASCADING AXIAL FLOW IN A LONG ULTRACENTRIFUGE FOR ISOTOPE SEPARATION. [1961] [22]p.
Order from SLA $2.60 61-18849

Trans. of Kernenergie (Germany) 1958, v. 1, p. 921.

DESCRIPTORS: *Ultracentrifuges, *Fluid flow, Production, Gas flow, *Isotope separation.

Varov, A. A. and Romm, I. I.
OCCURRENCE OF STRONTIUM AND BARIUM IN OIL FIELD WATER OF THE URAL-VOLGA REGION [1961] 1p. 1 ref.
Order from OTS or SLA $1.10 61-20221

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S. 1942, v. 35, no. 4, p. 114-117.

DESCRIPTORS: Geochemistry, *Strontium, *Barium, Determination, Oils, Water.

Weber, Josef.
FORMATION OF STEAM FROM WASTE HEAT AND EFFICIENCY OF DUST REMOVAL FROM THE CONVERTER WASTE GASES OF A WATER-COOLED CONVERTER STACK BY CYCLONES. Rept. no. 262 of the Machine Panel of the Verein Deutscher Eisenhüttenleute. [1961] [9]p. 2 refs.
Order from SLA $1.10 61-20590

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, 5 Mar, p. 291-294.
Another trans. is available from BISI & as BISI-1294 [1959].

DESCRIPTORS: *Iron, Processing, *Waste gases, *Steam, *Particles, Separation, Iron industry, Steel industry, Blast furnaces, Thermodynamics, Grains (Metallurgy), Oxides, *Cyclone furnaces.

Civil Engineering

ENGINEERING GEOCRYOLOGY: BEDS FOR ROADS AND AIRFIELDS [AND] UNDERGROUND UTILITY LINES. 26 July 61 [93]p. MCL-942/1+2.
Order from OTS or SLA $8.60 61-27807

Unedited rough draft trans. of mono. Osnovy Geokriologii (Merzlotovedeniya) (Principles of Geocryology (Permafrostology)) Moscow, 1959, pt. II, chaps. 8-9, p. 231-266.

DESCRIPTORS: *Permafrost, *Roads, *Landing fields, Construction, Deformation, Stability, Foundations (Structures), *Civil engineering, *Pipe fittings, Alaska.

Discussions are presented on (1) roadbed deformations caused by freezing and thawing, (2) methods of insuring a stable roadbed, (3) calculations of the stability of a roadbed, (4) thermal calculations for pipes laid in frozen ground, (5) methods of laying pipes, and (6) technical solutions for the construction of underground utility lines in Alaska.

Baar, G.
PRESTRESSED CONCRETE FOR A LARGE BUSINESS BLOCK SHOP AND OFFICES OF VROOM AND DREESMANN AT HEERLEN. [1961] 8p.
Order from SLA $1.10 61-20216

Trans. from Cement (Netherlands) 1949 [v. 1] no. 5/6.

DESCRIPTORS: Structures, Construction, Materials, *Concrete, Consumption, Civil engineering, Netherlands.

Baar, G.
TESTS ON PRESTRESSED CONCRETE BEAMS IN HOLLAND. [1961] 12p. 1 ref.
Order from SLA $1.60 61-20217

Trans. from Cement (Netherlands) 1950 [v. 2] no. 13/14.

DESCRIPTORS: *Concrete, *Beams, Test methods, Tests, Load distribution, Heating, Rupture, Netherlands.

Esquillan, N.
THE ROAD AND RAILWAY BRIDGE AT ABIDJAN IN FRENCH-WEST AFRICA. [1961] 36p.
Order from SLA $3.60 61-20211

Trans. from Société des Ingénieurs Civils de France. Memoires, 1958, Mar/Apr.

DESCRIPTORS: *Roads, *Railroad bridges, Bridges, Design, Construction, Concrete, Reinforced concrete, Civil engineering, Africa.

Dutron, P.
RESTORING CONCRETE SURFACINGS TO THEIR CORRECT LEVELS BY PRESSURE GROUTING AND RESURFACING WITH CEMENT MORTAR. [1961] 23p. 1 ref.
Order from SLA $2.60 61-20263

Trans. from National Belgian Roads Conference (no. 9) 1959. [Proceedings].

DESCRIPTORS: *Roads, Construction, Materials, Cements, Mortar, Concrete, Tests, Civil engineering, Belgium.

Finsterwalder, U.
CONCRETE ELEVATED ROADS, 1957. [1961] 13p. 4 refs.
Order from SLA $1.60 61-20222

Trans. from International Road Congress [held at] Rome, 16-19 Oct 57. [Proceedings].

DESCRIPTORS: *Concrete, *Roads, Construction, Costs, Germany, Civil engineering.

The price to pay for obtaining a structure that is both beautiful and efficient is not a very high one. (Author)

Hartmann, J. A. H.
THE PRESTRESSED CABLE. [1961] 4p.
Order from SLA $1.10 61-18998

Trans. from de Ingenieur (Netherlands) 1950, v. 62, no. 21.

DESCRIPTORS: *Steel wire, Tensile properties, *Reinforced concrete, Concrete, Processing, Wire.

Höltken, Hans.
EXPOSED CONCRETE. [1961] 18p.
Order from SLA $1.60 61-18984

Trans. of Beton und Stahlbetonbau (Germany) 1953, v. 48, no. 8, p. 177-182.

DESCRIPTORS: *Concrete, Housing, Structures, Construction, Civil engineering, Germany.

Kaufmann, Hans.
METHOD OF CONSTRUCTION USING PRECAST CONCRETE SHUTTERING SLABS. [1961] 7p.
Order from SLA $1.10 61-18986

Trans. of Beton und Stahlbetonbau (Germany) 1950, v. 45, no. 5, p. 116-118.

DESCRIPTORS: *Housing, Structures, Construction, Materials. *Concrete, Civil engineering, Germany.

The method of construction with precast concrete shuttering slabs which can be used for any thickness of wall of 25 cm or more, is applicable not only to housing and industrial buildings but also for retaining walls, bridge piers and other concrete structures. The economy effected is due to the three main advantages of the method: the slabs form part of the structure; timber or steel shuttering is unnecessary; and practically all plastering is eliminated. (Author)

Kudsk-Jørgensen, B.
ROOF OVER THE NEW LOADING AREA OF THE RAILWAY GOODS YARD AT COPENHAGEN, tr. by L. M. L. Booth. [1961] [11]p.
Order from SLA $1.60 61-18973

Trans. of Ingeniøren (Denmark) 1958, v. 67, no. 3, p. 118-122.

DESCRIPTORS: *Railroads, Cargo, *Roofs, Design, Construction, Structures, Denmark, Shelters.

Mörsch, Emil.
THE DETERMINATION OF THE ULTIMATE BENDING STRENGTH OF PRESTRESSED CONCRETE BEAMS. [1961] 37p. 2 refs.
Order from SLA $3.60 61-18987

Trans. of Beton und Stahlbetonbau (Germany) 1950, v. 45, no. 7, p. 149-157.

DESCRIPTORS: *Concrete, *Beams, Mechanical properties, Determination, Stresses, Elasticity.

Paduart, André.
PLANNING AND STUDIES ON THE ZWARTBERG-MEEUWEN PRESTRESSED CONCRETE TEST SECTION. [1961] 31p. 1 ref.
Order from SLA $3.60 61-20558

Trans. of la Technique Routière (Belgium) 1960, v. 5, no. 1, p. 1-18.

DESCRIPTORS: Belgium, Construction, Structures, *Concrete, *Reinforced concrete, Materials, Steel, Stresses, Traffic, Runways, Roads, Pavements.

Prahl, G.
CONSTRUCTION OF SINGLE STOREY INDUSTRIAL BUILDINGS WITH PRECAST REINFORCED CONCRETE MEMBERS. [1961] [20]p.
Order from SLA $1.60 61-20214

Trans. from Betonstein-Zeitung (West Germany) 1957, v. 23, no. 2.

DESCRIPTORS: Industry, *Structures, Construction, Concrete, *Reinforced concrete, Beams, Prefabricated buildings, Civil engineering, Germany.

Ranke, V. J. Chr.
THE TREATMENT OF ROADSIDE FEATURES. [1961] [11]p.
Order from SLA $1.60 61-18981

Trans. of Strassen- und Tiefbau (West Germany) 1957, v. 11, no. 8, p. 454-461.

DESCRIPTORS: *Roads, Construction, *Civil engineering.

Robert, M. E., Lebelle, M. P. and others.
PRESTRESSED CONCRETE RESERVOIR AT ORLEANS (WITH DISCUSSION). [1961] 40p.
Order from SLA $3.60 61-18989

Trans. from Institut Technique du Bâtiment et des Travaux Publics, Paris. Annales (France) 1959, [v. 12] no. 57.

DESCRIPTORS: *Concrete, Water supplies, *Structures, Design, Construction, Materials, *Dams.

Schaible, Lothar.
INFLUENCE OF THE SUBGRADE ON CONCRETE ROAD SLABS. [1961] 10p.
Order from SLA $1.10 61-18985

Trans. of Beton und Stahlbetonbau (Germany) 1952, v. 47, no. 10, p. 245-247.

DESCRIPTORS: *Concrete, *Roads, *Soils, Stability, Civil engineering, Germany.

Schonberg, W.
OBSERVATIONS ON THE CONSTRUCTION OF CONCRETE ROAD SLABS. [1961] 12p.
Order from SLA $1.60 61-18995

Trans. of Strasse und Autobahn (West Germany) 1955, v. 6, no. 8, p. 278-282.

DESCRIPTORS: *Concrete, *Roads, Construction, Civil engineering, Germany.

Theiner, J.
FINISHING MACHINES FOR CONCRETE ROAD CONSTRUCTION. [1961] 11p.
Order from SLA $1.60 61-20033

Trans. of der Bauingenieur (West Germany) 1954, v. 29, no. 11, p. 405-409.

DESCRIFTORS: *Concrete, *Roads, Construction, *Road building equipment, Civil engineering, Germany.

Electrical and Electronic Engineering

ELECTRICAL CONTACTS (SELECTED ARTICLES). 2 Nov 60 [76]p. 3 refs. MCL-480/1; AD-257 134.
Order from OTS or SLA $7.60 61-27268

Unedited rough draft trans. of Russian mono. Elektricheskie Kontakty, n.p., 1958, p. 79-95 and 255-296.

DESCRIPTORS: *Sliding contacts, Electric connectors, *Electrical equipment, USSR, Technological intelligence, Welding, Metals, Electric switches, Electric relays, Materials, Alloys, Welded joints.

Contents:
The role of an electrical contact in the process of forming a welded joint, by A. I. Pugin
Alloys of noble metals for electrical contacts carrying very low currents and voltages, by A. A. Rudnitskii
Alloys for electrical contacts with low contact resistance, by Z. S. Kirillova
The use of new materials for sliding contacts operating in self-synchronizing synchronous transmission systems, by E. K. Yuferova
Survey of experiments and research on contact materials made of precious metals, by V. A. Mityushev
The state of production and normalization of contacts and contact materials made of precious metals, by V. Z. Kozlov.

PROBLEMS AND TECHNIQUES IN EXPERIMENTS, 1960, NO. 2: SELECTED ARTICLES. 23 Feb 61 [17]p. 10 refs. MCL-757/1+2; AD-258 481.
Order from OTS or SLA $1.60 61-23673

Unedited rough draft trans. of #Pribory i Tekhnika Eksperimenta (USSR) 1960, no. 2, p. 146-148 and 150-152.

DESCRIPTORS: Technological intelligence, USSR, *Ion accelerators, *Ionic current, Measurement, Tests, Test equipment, Test methods, Plasma Physics, Optical systems, Ion sources, Ion beams, Electron tubes.

Contents:
Measuring the ion current in an ion-accelerating system, by V. A. Egorov and others
50-kv ion-accelerating tube, by L. V. Orfanov and V. A. Teplyakov.

Bezikovich, A. Ya. and Popov, V. S.
METHODS AND APPARATUS FOR TESTING WATTMETERS OVER THE AUDIO-FREQUENCY RANGE (Metod i Apparatura dlya Poverki Vattmetrov v Dyapazone Zvukovykh Chastot). Feb 61 [17]p. 5 refs. RTS 1701.
Order from OTS or SLA $1.60 61-15930

Trans. of Komitet Standartov [Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 39, p. 130-142.

DESCRIPTORS: *Wattmeters, Audiofrequency, Test methods, Test equipment.

Cabre, Michel.
SOUND RETURN MACHINE. [1961] 3p.
Order from AC $2.25

Trans. of French patent 1.027.404 [1953].

DESCRIPTORS: *Motion picture films, Installation, Motion picture sound, *Sound reproduction systems, Magnetic recording systems.

The purpose of the invention is to permit easy installation of movie films of any type and any format, with magnetic sound track or a sound track of another type which lends itself thereto. (AC abstract)

Cerulli, Jean.
DYNAMO CURRENT FLOW REDUCER. 21 Nov 61.
Order from AC $3.50

Trans. of French patent 788.074 [1935].

DESCRIPTORS: *Dynamotors, *Current regulators, Design.

The subject of the invention is a flow reducer in the form of a small-size rheostat, easy to attach to the dashboard of a vehicle and intercalated in the excitation circuit of the dynamo, a reducer which the user operates to regulate the output of the dynamo of the vehicle at any time, according to circumstances, that is to say taking account of the speed of the motor, current needs etc. (AC abstract)

Feldbaum, A. A.
DUAL CONTROL THEORY, IV (Teoriya Dual'nogo Upravleniya). 17 Aug 61 [23]p. 8 refs. MCL-1223/H-2
Order from OTS or SLA $2.60 61-28534

Unedited rough draft trans. of Avtomatika i Telemekhanika (USSR) 1961, v. 22, no. 2, p. 129-142.

DESCRIPTORS: *Control systems, Theory, Numerical methods and procedures.

A generalized algorithm is derived for the optimal dual control strategy for an object with several inputs and outputs, having memory. An example of the application of this algorithm is given. In conclusion, methods are examined for further development in the field of dual control theory. (Author)

Fel'dshtein, A. L.
A GENERALIZED MATRIX THEORY FOR NON-UNIFORM TRANSMISSION LINES. [1961] 18p. 14 refs.
Order from OTS or SLA $1.60 61-20539

Trans. of #Radiotekhnika (USSR) 1960, v. 15, no. 6, p. 10-17.

DESCRIPTORS: *Transmission lines, Electrical networks, Wave transmission, Numerical analysis, Matrix algebra, Integral equations, *Super high frequency, *Circuits, Theory.

A systematization and generalized treatment is given of an inhomogeneous line in the form of a four-terminal network. The normal wave matrix of transmission [T], describing the four-terminal network is assumed as the system of parameters. By using the summary equations to study the particular case of the step-shaped line and approaching the limit of the uniformly inhomogeneous line, it is possible to write the integral and differential equations for all elements of matrix [T] of the inhomogeneous line. The functions derived as a result of solving the integral (differential) equations for elements [T] are component parts of the solution of the Riccati equation for the input reflection factor of the inhomogeneous line. The matrix method of investigating inhomogeneous lines makes it possible to unify the approach to the solution of different problems of the theory of super-high frequency circuits. It is shown to be particularly useful for studying cascade connections of eight-terminal networks.

Figini, Gianfranco.
IMPROVEMENTS OF ELECTRICAL DRIVES FOR MACHINE TOOLS. [1961] 28p.
Order from STT $22.00 STT-186-181

Trans. of Macchine (Italy) 1960 [v. 15] Dec, p. 1129-1147.

DESCRIPTORS: *Machine tools, *Electrical equipment, *Electromagnetic drives.

Jones, Calvin C.
ANTENNA DISPOSITION FOR A RADIO STATION FROM WHICH TWO INDEPENDENT CONNECTIONS DEPART IN ONE DIRECTION, PARTICULARLY FOR AN AUXILIARY STATION OPERATING ON DECIMETRIC WAVES (Disposizione di Antenne per Una Radiostazione dalla Quale Partono in una Direzione Due Collegamenti Indipendenti, in Particolare per una Stazione Soccorritrice Funzionante ad Onde Decimetriche). 7 Nov 60 [8]p. MCL-734/2; AD-256 615
Order from OTS or SLA $1.10 61-23074

Unedited rough draft trans. of Italian appl. 647,457, patent 409116, cl. IX, by C. Lorenz AG (Germany) reg. 18 May 43, granted 1 Feb 45, submitted 19 June 42 with claim no. L-108211 reg. in Germany.

DESCRIPTORS: Technological intelligence, Cavity resonators, Ultra high frequency, Microwaves, *Radio transmission, *Radio stations, *Slot antennas, Dipole antennas, Italy.

In the beam lead-in system which is constructed as a cavity resonator, open on one side, two dipoles are located which are joggled together in the direction of the wave propagation in such a way that the polarization planes of the antenna fields are perpendicular to each other.

Kratz, Peter.
CONTROL AND REGULATION OF INDUCTION MOTORS. [1961] 22p.
Order from STT $18.00 STT-188-313

Trans. of [ETZ] Elektrotechnische Zeitschrift. [Ausgabe B. Der Elektrotechniker] (Germany) 1961, v. 13, no. 1, p. 1-7.

DESCRIPTORS: *Induction motors, *Control systems, Current regulators, Control.

Lesota, S. K.
MEASUREMENT OF THE CORRELATION BETWEEN THE AMPLITUDE AND FREQUENCY FLUCTUATIONS IN A REFLEX KLYSTRON. 17 Aug 61 [11]p. 7 refs. MCL-1271/1+2.
Order from OTS or SLA $1.60 61-28536

Unedited rough draft trans. of Moscow U. Vestnik. [Seriya 3]: Fizika, Astronomiya (USSR) 1961 [v. 16] no. 2, p. 3-8

DESCRIPTORS: *Reflex klystrons, Amplitude madulation, Frequency modulation, Measurement, Statistical functions.

The interference method, used to measure the amplitude and frequency fluctuations in radio-frequency oscillators, is used to study the correlation dependence between the amplitude and frequency fluctuations in a reflex klystron with a three-centimeter range. Experimental graphs are given for the correlation function at several different voltage values on the reflector plate of the klystron; these correspond to the generation region with the maximum generating power. (Author)

Phillips, N. B.
IMPROVED SEMICONDUCTOR DIODE CONSTRUCTION AND PERFORMANCE. 1 Sep 61.
Order from WBI

Trans. of published Japanese patent 36-13280, Aug 61, by N. B. Phillips, Holland.

DESCRIPTORS: *Semiconductors, *Diodes, Design.

Phillips, N. B.
TRANSISTOR AMPLIFIER WITH STABLE OUTPUT REFERENCE LEVEL. 1 Sep 61.
Order from WBI

Trans. of published Japanese patent 36-13461, by N. B. Phillips, Holland.

DESCRIPTORS: *Transistor amplifiers, Amplifiers.

Svenchanskii, A. D.
CONTROL DEVICE FOR THE ELECTRIC CURRENT IN STEEL MELTING ARC FURNACES. Oct 61.
Order from BISI £3 5s BISI-2365

Trans. of Vestnik Elektroprom[yshlennosti] (USSR) 1960 [v. 31, no. 8] p. 23-26.

DESCRIPTORS: *Steel, Melting, Electric furnaces, *Electric currents, Control systems.

Mechanical Engineering

DRIP CONDENSER WITH VERTICAL DOUBLE TUBES. 21 Nov 61.
Order from AC $2.25

Trans. of Swiss patent no. 86.263 [1920] by Linde' Eismaschinen AG.

DESCRIPTORS: *Refrigerant condensers, Design, Refrigeration systems, Cooling.

In the drip condensers for refrigerators with simple vertical tubes, the vapor undergoing condensation completely fills the cross sections of the tubes. Thus only the surface of these tubes is being utilized as cooling surface. With this invention an enlargement of the cooling surface and hence also an increase in the capacity of the apparatus is achieved. (AC abstract)

Scheubel, F. N.
ABOUT FLOW EXPERIMENTS ON MODELS OF BOILER COMBUSTION CHAMBERS (Uber Stromungsversuche an Modellen von Kesselbrennkammern). [1961] [11]p. 3 refs.
Order from SLA $1.10 61-20051

Trans. of Brennstoff-Warme-Kraft (West Germany) 1960, v. 12, no. 8, p. 347-350.

DESCRIPTORS: Boilers, *Combustion chambers, Model tests, Coal, Combustion, Particles, Gases, Motion.

After outlining the problem posed for the model experiment in boiler combustion chambers, the necessity of examining the processes of flow first on the "cold model' is stressed. Herein the Reynolds-number and a dust parameter characterizing the relative motion between coal dust and gas are to be considered as essentially similar parameters whereas nothing definite can yet be said about the turbulent mixing process between a dust-carrying and a dust-free jet. The influence on the flow by the combustion is discussed qualitatively. At the end some examples for model experiments of this kind are given. (Author)

Sanitation and Safety Engineering

Office of Technical Services, Dept. of Commerce, Washington, D. C.
PROTECTIVE SHELTERS. July 61, 11p. 116 refs. OTS Selective Bibliography SB-469.
Order from OTS $0.10 OTS-SB-469

DESCRIPTORS: Air raid shelters, Biological warfare agents, Chemical warfare agents, Blast, Exposure, Radioactivity, Thermal radiation, Countermeasures, Safety, *Protective shelters, Shelters, Civil defense systems, Bibliography.

Lists 116 PB reports, translations, and AEC reports on protective shelters available in the OTS collection.

Some of the reports have been specifically prepared for civil defense planning. Includes reports on the following types of shelters: Air raid, Biological warfare, Blast resistant, Bombproof, Chemical warfare, Cold weather, Hot weather, Nuclear radiation, Thermal radiation.

Pchelintseva, G. M., ed.
REGULATIONS FOR THE TRANSPORTATION OF RADIOACTIVE MATERIALS. 19 Oct 61 [71]p. JPRS: 10599.
Order from OTS or SLA $7.60 61-28933

Trans. of mono. Pravila Perevozki Radioaktivnykh Veshchestv, Moscow, 1961.

DESCRIPTORS: *Labeled substances, Radioactive isotopes, *Transportation, USSR, *Safety, Specifications.

Contents:
General rules
Classification of shipments of radioactive materials
Categories of shipping containers
Packing requirements for transportation of radioactive materials
General conditions for transporting packages containing radioactive materials
Transportation of packages with radioactive materials by the Civil Air Fleet
Transportation of radioactive materials by railroad
Transportation of radioactive materials by auto transport
Transportation of packages of radioactive materials by special delivery organs
Transportation of packages of radioactive materials on ships of the ocean and river fleet
Transportation of packages of radioactive materials in universal railroad, automotive and other containers
Requirements for temporary storage of packages of radioactive materials
Transportation of packages without radioactive materials
Measures to be taken when packages are damaged
Sanitary and health requirements
Appendices:
Maximum allowable levels of radiation
Maximum allowable contamination by radioactive materials
Minimum distances between packages of radioactive materials and places where people sojourn or locations of cargoes of undeveloped motion picture, photographic and x-ray films and plates
Radiation warning sign
Labels for packages of radioactive materials
Notification for the transportation of packages of radioactive materials by air transportation
Descriptive list number
Special delivery tag.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

Ricka, J.
GRINDING AT HIGH SPEEDS. [1961] 13p.
Order from STT $10.00 STT-175-290

Trans. of Strojirenstvi (Czechoslovakia) 1960, v. 10, no. 12, p. 920-924.

DESCRIPTORS: *Grinders, *Grinding wheels, Machine tools.

Shifrin, M. Yu. and others.
DEVELOPMENT OF A PRODUCTION TECHNIQUE FOR HOLLOW AXLES. Nov 61.
Order from BISI £4 10s BISI-2413

Trans. of Kuznechno-Shtampov[ochnoe Proizvodstvo] (USSR) 1960 [v. 2, no. 11] p. 11-15.

DESCRIPTORS: *Axle shafts, Manufacturing methods, Forging, Hydraulic presses, Railroad cars.

Zalmanzon, L. A. and Cherkasov, B. A.
CONTROL OF GAS-TURBINE AND RAMJET ENGINES. July 61, 259p. 161 refs. NASA Technical trans. F-41; AD-259 498.
Order from OTS $4.00 61-31523

Trans. of mono. [Regulipovanie Gazoturbinnykh i Pryamotochnykh Vozdushno-Reaktivnykh Dvigatelei] Moscow, 1956.
Partial trans. (p. 276-287, 297-301, 335-339) available from OTS or SLA $4.60 as 61-23834, MCL-501/1+2, 20 Mar 61 [43]p.

DESCRIPTORS: *Turbojet engines, *Ramjet engines, Control systems, Design, USSR, Technological intelligence, Fuel systems, Jet planes, Mathematical analysis, Differential equations, Stability, Transients, Synthesis, Turbojet exhaust nozzles, Jet engine fuels.

Attention is concentrated on describing the physical bases of the processes of engine control and an exposition of the methods of experimental study and design of control apparatus. A series of examples bring out the close connection between the operation of the elements in the control loop and the fuel supply system of the engines. The characteristics of the several elements of the fuel apparatus are given. The book is written as a textbook for students in Aviation Institutes, but may also be useful for workers specializing in the field of aviation engines. (Soviet publishers note)

Manufacturing Equipment and Processes

Assmann, Herbert and Buchhausen, Hans.
MATERIALS USED, HEAT TREATMENT AND OUTPUTS OF THREAD ROLLING TOOLS FOR THE MANUFACTURE OF SCREWS, PTS. 1-2. [1961] [30]p. 9 refs.
Order from SLA $2.60 61-18426

Trans. of Werkstatt und Betrieb (West Germany) 1949, v. 82, no. 11, p. 390-396 and no. 12, p. 435-440.

DESCRIPTORS: *Metal screws, *Screw threads, Machine tools, Materials, Heat treatment, Manufacturing methods.

Bartakova, B. and Kosobud, J.
THE PRODUCTION OF TROPICAL TEST CHAMBERS IN THE CSSR. [1961] 8p.
Order from STT $6.00 STT-154-293

Trans. of Strojirenstvi (Czechoslovakia) 1960, v. 10, no. 12, p. 941-943.

DESCRIPTORS: *Test equipment, Production Climatic factors.

Berezin, B. P., Mosyak, A. A. and others.
TECHNOLOGY OF THE MOST IMPORTANT BRANCHES OF INDUSTRY, VOL. 2: MACHINE DESIGN, PT. 3: THE WELDING AND CUTTING OF METALS, CHAPS. 1-3. 26 Apr 61 [77]p. (5 figs. omitted). MCL-806/1+2; AD-260 685.
Order from OTS or SLA $7.60 61-27316

Unedited rough draft trans. of mono. Tekhnologiya Vazheishikh Otraslei Promyshlennosti, chast' II: Mashinostroenie, Moscow, 1959, p. 125-178.

DESCRIPTORS: *Machines, Design, *Welding, Metals, Alloys, Electric welding, Arc welding, USSR, Welded joints, Gases, Blow torches, Oxygen, Acetylenes, Cutting torches.

Contents:
Electric-arc and arcless submerged fusion welding
Electrical resistance welding
Gas welding and cutting.

Brosch, Herbert and Waburek, Helmut.
PRODUCTION CONTROL IN ROLLING MILLS BY MEANS OF COMMUNICATING AND SIGNALLING SYSTEMS. Rept. no. 259 of the Rolling Mill Committee of the Verein Deutscher Eisenhüttenleute. [1961] 21p.
Order from SLA $2.60 61-20597

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 1, p. 23-32.
Another trans. is available from BISI £6 10s as BISI-1198 [1959].

DESCRIPTORS: *Rolling mills, *Control systems, *Industrial production, *Communication systems, *Programming, Castings, Railroad cars, Railroads, Transportation, Locomotive trains, Hoists, *Radio signals, *Remote control systems, *Radio communication systems, Iron industry, Steel industry

The present state of the control systems and auxiliary instruments in rolling mills is described. (Author)

Heischkeil, Werner, Becker, Karl and others.
NEW CONSTRUCTION IN THE BASIC CONVERTER AND OPEN-HEARTH STEEL PLANTS OF AN INTEGRATED IRON AND STEEL WORKS. Rept. no. 660 of the Steel Works Committee of the [Verein Deutscher Eisenhüttenleute. [1961] [31]p. 19 refs.
Order from SLA $3.60 61-20598

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 1, p. 8-22.
Another trans. is available from BISI £6 as BISI-1208 [1959].

DESCRIPTORS: Construction, *Open hearth furnaces, *Steel industry, *Iron industry, *Rolling mill, *Steel.

The paper describes reconstruction of a basic converter steel plant and of an older open-hearth steel plant of the August Thyssen-Hütte at Hamborn. The erection of a new wide strip rolling mill required an increase of the open-hearth steel (or steel of equal quality) to 50% of the total steel production. Planning, erection and engineering data of the open-hearth steel plant, consisting of four fixed 250-ton furnaces for a monthly production of 60,000 tons are given. Final production aimed at is 100,000 tons. (Author)

Koch, Karl-Hans.
DEVELOPMENT AND TASKS OF THE WATER SUPPLY SERVICE IN THE IRON AND STEEL INDUSTRY Rept. no. 469 of the Fuel and Power Dept. and no. 257 of the Machine Panel of the Verein Deutscher Eisenhüttenleute. [1961] 13p.
Order from SLA $1.60 61-20612

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 2, p. 89-94.
Another trans. is available from BISI £4 5s as BISI-1252 [1959].

DESCRIPTORS: *Water supplies, *Iron industry, *Steel industry, Consumption, Contamination, Water filters, Water tanks, Sulfuric acid, Purification, Slags, Sand, Soils, Sewage, Chemical waste.

Krumbol'dt, M. H.
SPOT WELDING WITH THE HELP OF ULTRASOUND: [SELECTED PART]. 25 Apr 61 [10]p. MCL-811/1+2; AD-260 684.
Order from OTS or SLA $1.10 62-13392

Unedited rough draft trans. of mono. Tochyechaya Svarka s Pomoshyu Ulytrazvuka [Leningrad] 1959, p. 235-243.

DESCRIPTORS: *Spot welding, *Ultrasonics, Pressure, Vibration, Oxides, Thin films, Crystallization, Aluminum, Copper, Stainless steel, Waveguides, Nitrocellulose, Camphors, Heating, Temperature, Welded joints, Mechanical properties, *Sheets, Stresses, Deformation, USSR.

The techniques and equipment for ultrasonic welding of sheets of Al, Cu, stainless steel, and celluloid are described. The formation of common crystals during the transfer of vibrations through the contact zone is discussed. Measurements were made of the temperature changes in the weld zone which were found to be dependent on the clamping force and the thermal conductivity of the material. Continued application of ultrasonic vibrations led to extensive cold hardening and destruction of the material. Spot welds were produced by ultrasonic welding in Al and stainless steel which were as strong as spot welds produced by electric welding. (ASTIA abstract)

Latour, A. and Schoop, J.
A VIBRATION METHOD FOR THE PREPARATION OF CONVERTER LININGS. [1959] [8]p. 5 refs.
Order from SLA $1.10 61-20614

Trans. of Stahl und Eisen (West Germany) 1953 [v. 73] 15 Jan, p. 81-84.
Another trans. is available from BISI £3 as BISI-1253, 13 Mar 59.

DESCRIPTORS: *Blast furnaces, *Vibrators, *Friction, Dolomite, Tar, *Vibration isolators, *Steel industry, *Combustion chamber liners, Rectifiers.

Better bottom lives can be obtained by the vibration method than by the jolting process. The compaction energy used, as denoted by the vibrator output, has a considerable effect on bottom life, according to the data available. The method is simple to carry out and requires only a moderate amount of space. (Author)

Topchiev, A.
THE GENERAL TREND IN TECHNICAL PROGRESS. 3 Oct 61 [10]p. JPRS: 10405.
Order from OTS $1.10 61-28583

Trans. from Ekonomicheskaya Gazeta (USSR) 1961, 14 Aug, p. 6-7.

DESCRIPTORS: *Industrial production, Machines, *Automation, Technological intelligence, USSR.

The tentative draft of the CPSU Program calls for complex mechanization and automation of industry.

Zur, Maximilian.
THE WATER SUPPLY SYSTEM OF THE HOESCH-WESTFALENHÜTTE A. G., DORTMUND. Paper no. 463 of the Fuel Economy Section and Rept. no. 247 of the Machine Committee of the Verein Deutscher Eisenhüttenleute. [1959] [27]p.
Order from SLA $2.60 61-20605

Trans. of Stahl u[nd] Eisen (West Germany) 1958, v. 78, no. 17, p. 1191-1200.
Another trans. is available from BISI £5 15s as BISI-1071 [1959].

DESCRIPTORS: *Water supplies, *Steel industry, Germany, Bacteria, Consumption, Steel, Production, Diesel engines, Hydraulic reservoirs, Control systems, Pumps, Installation, Potential theory, Switching circuits.

Transport, Traction and Hoist Facilities

DIESEL LOCOMOTIVES WITH ELECTRIC AND HYDRAULIC POWER TRANSMISSION. [1961] 21p.
Order from STT $15.00 STT-155-623

Trans. of D[eu]tsch]e Eisenbahntechnik (East Germany) 1961, v. 9, no. 3, p. 125-129.

DESCRIPTORS: *Diesel engines, *Locomotives, Hydraulic power systems.

RAILROAD TRANSPORTATION, 1960 [VOL. 42] NO. 1: [SELECTED ARTICLES]. [1961] 18p. H-8763; JPRS (R-1558-D).
Order from OTS $0.50 61-31593

Trans. of Zheleznodorozhnyi Transport (USSR) 1960 [v. 42] no. 1, p. 23-27, 68-69, 81.

DESCRIPTORS: *Railroads, *Transportation, Refrigerator cars, Computers, Mathematical computer data, Control systems, Railroad cars, Refrigeration systems, Heating plants, Air conditioning equipment.

Contents:
Mechanization of accounting procedure, by S. I. Medvedev
Perfecting isothermic trains with mechanical refrigeration, by M. E. Anufriev
Calculation of an optimal plan of control of empty cars by computing machine, by E. P. Nesterov and S. G. Ratin.

Eckinger, Karl.
MODERN BASIS FOR THE DEVELOPMENT OF CRANE BRIDGES. Mar 59 [27]p. 12 refs.
Order from SLA $2.60 61-18423

Trans. of Stahl u[nd] Eisen (West Germany) 1957, v. 77 [10 Jan] p. 15-[23].
Another trans. is available from BISI £5 as BISI-922 [1959].

DESCRIPTORS: *Hoists, *Girders, *Locomotive cranes, Design, Ores, Loading, Stresses, *Bridges, *Railroad bridges, Remote control systems, *Web beams, Steel industry, Rolling mills

Schwarz, H.
TORSION-RESISTANT BOX GIRDER IN STEEL-WORKS CRANE CONSTRUCTION. [1961] [14]p.
Order from SLA $1.60 61-18403

Trans. of Stahl u[nd] Eisen (West Germany) 1957 [v. 77 10 Jan] p. 24-28.
Another trans. is available from BISI £3 15s as BISI-923 [1959].

DESCRIPTORS: *Box beams, *Hoists, Materials, *Girders, *Locomotive cranes, Construction, Steel industry, Iron industry, *Torsion meters, Corrosion inhibition, Joints

For abstract see Technical Translations 2: 593, 1959.

MATERIALS

Brocard, M. J.
ACCELERATORS AND RETARDERS OF THE SETTING OF CEMENT. [1961] [9]p. 5 refs.
Order from SLA $1.10 61-20475

Trans. from Institut Technique du Bâtiment et des Travaux Publics, Paris. Circulaire serie M [sic] (France) 1946, no. 18.

DESCRIPTORS: *Cements, Materials, *Accelerators, France, Hardening, Construction, Catalysts, Metallurgy, Chemical industry, Physical chemistry.

Clad, Werner.
THE EVALUATION OF UREA-RESIN-GLUES BASED ON TESTS (Die Beurteilung von Harnstoff-Harzleimen auf Grund ihrer Prüfung). [1961] [41]p. (refs. 1 fig omitted).
Order from SLA $4.60 61-20489

Trans. of Holz als Roh- und Werkstoff (West Germany) 1960, v. 18, no. 10, p. 391-399.

DESCRIPTORS: *Urea, *Resin adhesives, Adhesives, Test methods, Tests, Wood, Adhesion, Climatic factors.

Czernin, W.
TEN YEARS AT THE RESEARCH INSTITUTE OF THE ASSOCIATION OF AUSTRIAN CEMENT MANUFACTURERS. [1961] 14p. (illus. omitted).
Order from SLA $1.60 61-20546

Trans. of Zement und Beton (Austria) 1961, no. 21, p. 1-9.

DESCRIPTORS: *Cements, Industrial plants, Manufacturing methods, Austria, Materials, *Concrete, Structures, Construction, Chemical industry, Mechanical properties, Creep, Chemical reactions, Metallurgy.

Langavant, J. Cleret de.
THE NATURE AND CHARACTERISTICS OF CEMENTS AND LIMES MADE IN FRANCE. [1961] [21]p.
Order from SLA $2.60 61-20474

Trans. from Institut Technique du Batiment et des Travaux Publics, Paris. Circulaire serie F [sic] (France) 1947, no. 38.

DESCRIPTORS: *Cements, France, Materials, Construction, Classification, Control, Physical properties, Slags, Binders, Abundance, *Calcite, *Reinforced concrete, Clays, Industrial production.

Lossier, Henry.
THE SELF-STRESSING OF CONCRETE BY EXPANDING CEMENTS. [1961] 37p.
Order from SLA $3.60 61-18994

Trans. of Société des Ingénieurs Civils de France. Memoires, 1948, no. 3/4, p. 189-225.

DESCRIPTORS: *Concrete, Stresses, *Cements, Mechanical properties, *Reinforced concrete.

Naumann, F. K. and Bäumel, A.
DAMAGE TO TENSION WIRES BY HYDROGEN ABSORPTION IN ALUMINOUS CEMENT CONCRETE. Oct 61.
Order from BISI £4 15s BISI-2325

Trans. of Arch[iv für das] Eisenhut[tenwesen] (West Germany) 1961, v. 32, Feb, p. 89-94.

DESCRIPTORS: *Steel wire, *Wire, *Concrete, *Corrosion, Hydrogen compounds, Sulfides, Aluminum, Heat, Absorption.

Sandeman, C. S.
IMPROVEMENTS IN HYDRAULIC APPARATUS. [1961].
Order from AC $3.75

Trans. of Belgian patent no. 539,548 [1955].

DESCRIPTORS: *Hydraulic systems, *Hydraulic fluids, Corrosion inhibition, Lubrication, Fluids.

The object of the invention is a hydraulic apparatus introducing into a given hydraulic device a fluid which dissolves in the pressure liquid contained in this device and imparts to it certain qualities, particularly anti-rust, anti-corrosive and/or lubricating qualities. (AC abstract)

Spektor, B. V.
INFRA-RED HEATING IN THE PRODUCTION OF CONCRETE. [1961] 6p.
Order from OTS or SLA $1.10 61-20032

Trans. of Beton i Zhelezobeton (USSR) 1956, no. 7, p. 264-266.

DESCRIPTORS: *Concrete, *Infrared radiation, Boilers, Steam, *Heating, Infrared equipment, Industrial production, Cements, Heat treatment, Construction, Materials.

Tepohl, W.
RECENT EXPERIENCES IN ONE COAT WHITE ENAMELLING. [1959] [10]p. (2 figs. omitted) 10 refs.
Order from SLA $1.10 61-20659

Trans. of Stahl und Eisen (West Germany) 1959 [v. 79] 19 Mar, p. 356-361.
Another trans. is available from BISI £2 10s as BISI-1307 [1959].

DESCRIPTORS: *Enamel coatings, *Steel, *Adhesion, Chemical impurities, Coatings.

Wittekindt, W.
SULFATE RESISTANT CEMENTS AND THEIR TESTING. [1961] 18p. (1 photo omitted) 40 refs.
Order from SLA $1.60 61-20557

Trans. of Zement-Kalk-Gips (West Germany) 1960, v. 13, no. 12, p. 565-572.

DESCRIPTORS: *Cements, *Sulfates, Resistance, Materials, Chemical properties, Concrete, Tests.

Fuels, Lubricants, and Hydraulic Fluids

Oreshko, V.F.
EEN NIEUWE METHODE VOOR DE BEPALING VAN HET VERMOGEN VAN KOLEN TOT ZELFONTBRANDING (Estimation of the tendency of coal to self-inflammation), tr. by G.J.M. Fritchy. 8 p. 2 refs. MTWL: 469. (Text in Dutch).
Order from OTS or ETC $1.55 61-17034

Trans. of Zavodskaya Laboratoriya (USSR) 1948, v. 14, p. 290-296.

DESCRIPTORS: *Coal, Inflammable materials.

Petrov, A. D., Krutov, K. M., and Khrenov, I. M.
SYNTHESIS AND PROPERTIES OF ETHYLPROPYLCYCLOHEXYLMETHANE AND ISOPROPYLHEXYLCYCLOHEXYLMETHANE. [1961] 3p. 7 refs.
Order from OTS or SLA $1.10 61-20147

Trans. of Zhurnal Obshchei Khimii (USSR) 1945, v. 15, p. 799-801.

DESCRIPTORS: Synthesis, *Methanes, Antiknock, Octanes, Petroleum, Hydrogenation, Ethylenes, Cyclohexanes, Molecular structure, Alcohols, *Fuels, *Aviation fuels, Ethyl radicals, Propyl radicals, Hexyl radicals.

Ethylpropylcyclohexylmethane and isopropylhexylcyclohexylmethane, not previously reported in the literature, were synthesized. The pour points of these hydrocarbons and their antiknock properties expressed in cetene numbers were determined. (Author)

Sokolik, A. S.
SPONTANEOUS COMBUSTION, FLAME, AND DETONATION IN GASES. 4 May 61, 2p. 5 refs.
AID Rept. 61-62; AD-257 907.
Order from OTS or SLA $1.10 61-23500

Abstract trans. of mono. Samovosplamenenie, Plamya i Detonatsiya v Gazakh, Moscow, 1960, 427p.

DESCRIPTORS: Gases, *Combustion, Detonation, *Flame propagation, Shock waves, Pressure, Acceleration, USSR.

Predetonation flame acceleration occurs because the mean velocity of flame propagation exceeds the local speed of sound. The flame thus overtakes the shock-wave front at the moment of ignition. Shock-wave pressure during combustion equals the pressure at the end of the chemical reaction. (Extracted)

Sredniawa, J.
VERBRANDING VAN DE KOLENFRACTIE VAN MINDER DAN 1 MM KORRELGROOTTE (STOFKOOL) IN DE VORM VAN BRIKETTEN ZONDER BINDMIDDEL (Combustion of coal of less than 1 mm. size (dust) in the form of briquets without binder) tr. by G.J.M. Fritschy. 10 p. MTWL: 470. (Text in Dutch).
Order from OTS or ETC $1.55 61-17035

Trans. of Przegląd Górniczy (Poland) 1949, v. 5, p. 1225-1231.

DESCRIPTORS: *Coal, *Combustion, Powders.

Tafts, E.M., Letova, V.K., and Tyabina, Z.S.
OVER EEN METHODE TER CLASSIFICATIE VAN MAGERE KOLEN NAAR HUN BAKKEND VERMOGEN (On a method of classification of meagre coal after its coking capacity). tr. by G.J.M. Fritschy. 6 p. 4 refs. MTWL: 468 (Text in Dutch).
Order from OTS or ETC $1.55 61-17033

Trans. of Zavodskaya Laboratoriya (USSR) 1948, v. 14, p. 1229-1232.

DESCRIPTORS: *Coal, Classification, Decomposition.

Velikovskii, D. S.
MECHANICAL EQUIVALENT OF THE INTERNAL FRICTION OF GREASES. [1961] 17p. 29 refs.
Order from OTS or SLA $1.60 61-18859

Trans. of mono. Soveshchanie po Vyazkosti Zhidkostei i Kolloidnykh Rastvorov ([Conference on Viscosity of Liquids and] Colloidal Solutions) [held] 12-16 May 41. [Trudy] 1944, v. 1, p. 215-231.

DESCRIPTORS: *Greases, Friction, Lubricants, Mechanical properties, Internal friction.

For hydrodynamical calculations the values of the mechanical equivalents of internal friction of greases may be used, which constitute the viscosity in poises or stokes of the oil producing a coefficient of mechanical friction identical with the grease under test at a given velocity and load or requires an identical stress for pumping through tubes of definite length and diameter with an identical velocity. These equivalents can be relatively easily determined experimentally. (Author)

Volarovich, M. P.
LOW TEMPERATURE PROPERTIES OF LUBRICATING OILS. [1961] 3p.
Order from OTS or SLA $1.10 61-20406

Condensed trans. of Akademiya Nauk SSSR. Vestnik, 1945 [v. 15] no. 10/11, p. 90-93.

DESCRIPTORS: Lubrication, Oils, *Low temperature lubricants, Temperature.

Research on properties of lubricating oils at low temperatures carried out at the Institute of Machine Study since 1939 is summarized. (Author)

Leather and Textiles

Calvet, Edward.
THE MERCERIZATION OF CELLULOSE BY SODA. [1961] 24p. (5 figs. omitted) 8 refs.
Order from SLA $2.60 61-18257

Trans. of Mem[orial des] Services Chim[iques de l'] Etat (France) 1948, v. 34, p. 163-177.

DESCRIPTORS: *Cellulose, Processing, *Sodium compounds, *Hydroxides, Absorption, Temperature, *Cotton textiles.

At ordinary temperatures mercerized cellulose absorbs, sensibly the same amount of soda whatever may be the concentration of the solutions used between 2N and 5N, while, for higher temperatures, around 40°, there is no important difference between the absorption of soda by mercerized and unmercerized celluloses. (Author)

Heijnis, J. W. Y.
PREVENTION OF BREAKAGE OWING TO CLAMPING IN THE DETERMINATION OF THE TENSILE STRENGTH AND ELONGATION AT BREAK OF YARNS. [1961] [11]p.
Order from SLA $1.60 61-14013

Trans. of [Rayon Revue] (Netherlands) 1949, v. 3, p. 142-148.

DESCRIPTORS: *Threads, Tensile properties, Textiles, Manufacturing methods, *Clamps, Synthetic fibers, Fibers.

Kalkman, J. A.
THE PROPERTIES OF THREAD BRAKES. II. DO NOT REPROACH THE WEAVER FOR SOMETHING THAT HAS HAPPENED IN THE PREPARATION. [1961] 14p. (figs. omitted) 3 refs.
Order from SLA $1.60 61-16716

Trans. of [Rayon Revue] (Netherlands) 1954, v. 8, p. 54-77.

DESCRIPTORS: *Threads, *Rayon thread, Processing, *Textiles, *Nylon, *Fibers.

For the warping of crepe yarns damped finger brakes or pressure-shoe brakes are applied; it is recommended to give crepe yarns before the brake a single encircling around an axis, S-crepe clock-wise, Z-crepe counterclockwise. Pushing up of the twist was found during the examination only at dish brakes. Crepe can be warped from cones at velocities up to 600 m./min. Td 50(10) S 300 Enkalon yarn does not offer any special warping difficulties, when damped finger brakes, compensated dish brakes, or pressure shoe brakes are used. Reasonable results are obtained with dish brakes. Low-twisted rayon yarns run quietly through compensated dish brakes and pressure-shoe brakes. Dish brakes give generally also satisfactory results. Encircling brakes with complete encircling are universally useless. The pressure-shoe brakes and the magnetic brakes of group E are universally useful. The sensitivity to velocity increases with increasing encircling. (Author)

Röder, H. L.
GOOD SHEARING IS HALF OF THE WEAVING. [1961] 11p. (1 graph 7 figs. omitted) 9 refs.
Order from SLA $1.60 61-16717

Trans. of [Rayon Revue] (Netherlands) 1953, v. 7, p. 45-53.

DESCRIPTORS: *Rayon thread, Synthetic fibers, *Textile industry, Manufacturing methods, *Threads, *Fibers, Nylon.

Attention is called to three recent developments, which are in relationship to each other: (1) crepe yarns delivered on cones; (2) a yarn brake developed by the AKU as "AKU-pressure-shoe brake"; and (3) a shearing frame developed by the N. V. Machinefabriek L. to Strake, Dourne. Requirements are described which have to be met in general in order to obtain optimum results upon shearing of normal rayon or Enkalon yarns as crepe yarns. By a combination of the 3 developments pointed out above it has become possible among other things to shear warps of crepe yarns as a volocity of about 600 m/min. (Author)

Sippel, A.
THE LAWS GOVERNING DEGRADATION OF TEXTILE FIBERS BY ENERGY-RICH RADIATION AND HEAT. [1961] 20p. 23 refs.
Order from SLA $1.60 61-20647

Trans. of Melliand Textilberichte (West Germany) 1957, v. 38 [no. 8] p. 898-904.
Another trans. is available from SLA mi$2.70, ph$4.60 as 59-15744 [1959] 25p.

DESCRIPTORS: Textile industry, *Fibers, Temperature, *Radiation effects, *Light, *Thermal radiation, *Synthetic fibers, *Textiles.

Trutmann, K.
MAKING SPUN RAYON FABRICS RESISTANT TO SHRINKAGE AND WASHING, ACCORDING TO THE AVCOSET PROCESS. [1961] 10p. 25 refs.
Order from SLA $1.10 61-14014

Trans. of [Rayon Revue] (Netherlands) 1954, v. 8, no. 4, p. 125-134.

DESCRIPTORS: *Rayon fibers, Textiles, *Synthetic fibers, Processing, Fibers.

Results are given of an experimental investigation, which was carried out by the Textile Research Department of the AKU-HKI, with the purpose of ascertaining the value that can be attached to the Avcoset process of American Viscose Corporation. Through this process good results may be obtained. (Author)

Photographic Materials

Chibisov, K. V.
INTERNATIONAL COLLOQUIUM ON THE SCIENCE OF PHOTOGRAPHY. [1961] 8p.
Order from OTS or SLA $1.10 61-18309

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 3, p. 234-238.

DESCRIPTORS: Conferences, *Photography, Crystals, Impurities, Photographic equipment, Gelatins, Photochemistry, Photosensitivity, Sensitization.

Names of some of the speakers are given (and their topics are noted) who appeared at the colloquium that convened in Liege (Belgium) on September 14 to 19, 1959. In general the following four topics were discussed: (1) defects in crystals and elementary processes; (2) the role of gelatin; (3) chemical sensitization; and (4) optical sensitization.

Zelikman, V. L. and Klyuenkova, E. I.
A COMPARISON OF DIFFERENT METHODS OF PREPARATION OF PHOTOGRAPHIC EMULSIONS. [1960] [19]p. 16 refs. [DSIR NLL] M.2469.
Order from OTS or SLA $1.60 61-15553

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1958, v. 3, no. 5, p. 335-344. Another trans. is available from ATS $19.95 as ATS-54L35R [1959] 13p.

DESCRIPTORS: *Photographic emulsions, Preparation, Ammonia, Photographic chemicals, Photographic equipment, Infrared images, Optical images, Chemical reactions, Chemical analysis, Chemical properties.

The interrelationship has been examined between the values of photometric equivalent P and the maximum light sensitivity obtained during the process of finishing (S_{max}) and it has been determined that it follows the equation of the straight curve: $P = \tan \alpha (S_{max} - b)$ in each particular method of preparing photographic emulsions, where tan α and b are constants for the given particular method under the conditions of the given scheme of preparation of emulsions. By using the relationship indicated it is possible to make a comparative evaluation of any concrete method of preparation of emulsion, in relation to microgranininess of the developed emulsion determined by such a method, at a given order of light sensitivity. The advantages of any method of preparation of an emulsion are not retained over the extent of the entire range of light-sensitivity values determined by the given method and that they must be regarded as adaptable to the value which was obtained by the method. In a general case the change in the method of the second emulsification with its specific amount of ammonia and method of adding it to the emulsion, affects the microgranininess of the developed image in the same degree as the change in the method of the first emulsification. (Author)

Plastics

A PROCESS FOR PREPARING PLASTIC SYNTHETIC "RESINS". [1961] 2p. 16 refs.
Order from OTS or SLA $1.10 61-20282

Trans. of objections and demonstration of proof by Dynamit Nobel Aktiengesellschaft against German patent application H 29 044 IVb/39b (DAS 1 096 029)by Hooker Chemical Corp., U. S. A., pub. 29 Dec 60.

DESCRIPTORS: Resins, *Phenolic resins, Preparation, Plastics.

Beer, Franz.
SOME MECHANICAL PROPERTIES OF CROSSWISE REINFORCED RESINS. [1961] [28]p. 7 refs.
Order from SLA $2.60 61-18881

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (West Germany) 1959, v. 101, no. 12, p. 463-468.
Another trans. is available from ATS $14.95 as ATS-82L35G [1959] 13p.

DESCRIPTORS: Mechanical properties, *Plastics, Polymers, *Glass textiles, *Epoxy resins, Fibers, Esters, Chemical analysis, Materials, Stresses, Coatings, Algebra, Varnishes, Adhesion, Tensile properties, Resistance, Buckling, *Embedding substances, *Laminates, Elasticity, Mathematical analysis, *Reinforcing materials.

The behavior of synthetic resins reinforced with parallel and crossing fibers under tension in the direction of or normal to the fibers was theoretically examined. Formulae were developed to calculate from the properties of the components the values of the modulus of elasticity, tensile strength, elongation at break and Poisson's ratio which vary with the direction of the force. The values calculated for polyester resin reinforced with glass fibers are in agreement with published results within the error common for these materials. (Author)

Elbers, Ferdinand and Fischer, Friedrich.
METHODS FOR PRACTICAL TESTS ON THE STRESS CRACKING RESISTANCE OF DIFFERENT TYPES OF POLYETHYLENES. [1961] 21p. 7 refs.
Order from SLA $2.60 61-20018

Trans. of Kunststoffe (West Germany) 1960, v. 50, no. 9, p. 485-490.

DESCRIPTORS: *Polymers, *Ethylenes, Fracture (Mechanics), Stresses, Corrosion, Tensile properties, Test methods, *Plastics.

A simple test method is described with which the plastics manufacturer can form an objective opinion about the tendency of a material to crack. (Author)

Land, Wolfgang.
STERILIZABLE PLASTICS. [1961] 21p. 33 refs.
Available on loan from SLA 61-20200

Trans. of Neue Verpackung (Germany) 1960, v. 13, no. 10, p. 926, 928, 930, 932.

DESCRIPTORS: *Packaging, *Plastics, Containers.

Wood and Paper

Brecht, Walter and Wesp, Adam.
A NEW APPARATUS FOR TESTING FOLDING STRENGTH. [1961] [34]p.
Order from SLA $3.60 61-20097

Trans. of das Papier (West Germany) 1952, v. 6, no. 21/22, p. 443-449 and no. 23/24, p. 496-503.

DESCRIPTORS: *Paper, Mechanical properties, Test equipment.

The range of the pressure folder extends from 20g/m^2 to 500 g/m^2, without reference to the tensile strength. Its principle as calculated gives a true picture of the fold strength of the sheet. (Author)

Kübler, Hans.
ORIGIN OF GROWTH STRESSES AND STRESSES IN TRANSVERSE DIRECTION [PT. 1] (Die Ursache der Wachstumsspannungen und die Spannungen Quer zur Faserrichtung). [1961] [30]p. (refs. 11 figs. omitted).
Order from SLA $2.60 61-20488

Trans. of Holz als Roh- und Werkstoff (West Germany) 1959, v. 17 [no. 1] p. 1-9.
Another trans. is available from SLA mi$2.70, ph$4.80 as 60-16492 [1960] [26]p.

DESCRIPTORS: *Trees, Growth, Stresses, History, Deformation, Tensile properties.

A theoretical transverse stress state in tree stems is mathematically derived by the assumption that the circumferential stress of the growing young wood is constant; measured strains agree nearly with the theoretical equations. (Author)

MATHEMATICS

BIOGRAPHIES OF SOVIET MATHEMATICIANS: SELECTED TRANSLATIONS. 21 Sep 61 [56]p. 142 refs. JPRS: 10238.
Order from OTS or SLA $5.60 61-28718

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1960, v. 15, no. 6(96) p. 175-180; 1961, v. 16, no. 2(98) p. 169-196; Moscow U. Vestnik. Seriya 1: Matematika, Mekhanika (USSR) 1961 [v. 16] no. 1, p. 3-8.
#Another trans. of p. 189-196 is available from OTS or SLA $2.60 in 61-27722, JPRS-9807, 3 Aug 61 [26]p.

DESCRIPTORS: *Mathematicians, *Scientific personnel, Personnel, USSR.

Contents:
#A. A. Dorodnitsyn, N. I. Muskhelishvili, I. G. Petrovskii, N. V. Efimov.

Rutishauser, Heinz.
REMARKS ON SMOOTH INTERPOLATION (Bemerkun (Bemerkungen zur Glatten Interpolation). [1961] [15]p. (foreign text included).
Order from SLA $1.60 61-20086

Trans. of Zeitschrift fur Angewandte Mathematik und Physik (Switzerland) 1960, v. 11, no. 6, p. 508-513.

DESCRIPTORS: *Functions, Polynomials, Numerical analysis.

The usual interpolation formulae for equidistant abscissae (Newton-Gregory, Bessel) define a piecewise polynomial approximation function whose first derivative is generally discontinuous at every meshpoint. It is shown how these formulae can be modified (without using higher derivatives of the given function) such that the piecewise polynomial approximation function has s continuous derivatives (where s is a given integer). (Author)

Vallee Poussin, C. de la.
READINGS ON THE APPROXIMATION OF FUNCTIONS OF ONE REAL VARIABLE: PREFACE AND INTRODUCTION. [1961] [16]p. 2 refs.
Order from SLA $1.60 61-20431

Partial trans. of mono. Collection de Monographies sur la Théorie des Fonctions, v. 9: Lecons sur l'Approximation des Fonctions d'une Variable Réelle, Paris, 1952.

DESCRIPTORS: *Real variables, *Functions, Numerical analysis, Polynomials, Trigonometry.

Computing Devices

Berezovets, G. T., Dmitriev, V. N., and Tal', A. A.
NEW SYSTEM OF PNEUMATIC COMPUTERS, PT. I (Novaya Sistema Pnevmaticheskikh Vychislitel'nykh Ustroistv, I). 18 Aug 61, 9p. (9 figs. omitted) 7 refs.
H-9309; JPRS (R-1801-D).
Order from OTS $0.50 61-31640

Trans. of #Avtomatika i Telemekhanika (USSR) 1961, v. 22, no. 1, p. 111-118.

DESCRIPTORS: *Pneumatic systems, Amplifiers, Linear systems, Digital computers, *Computers, Design.

Methods are described of building pneumatic linear computers based on pneumatic amplifiers working at low pressures (0-100 mm water). Methods of performing linear algebraic operations are presented.

Labin, Edouard.
ARITHEMETIC UNIT AND UTILIZATION THEREOF IN COMPUTERS, tr. by P. C. C. 13 Oct 61, 9p. (4 figs. omitted).
Order from OTS or SLA $1.10 61-28958

Trans. of French patent 1,141,001, gr. 12, cl. 3, internate. cl. G 06 f, by Société Nouvelle de l'Outillage R. B. V. et de la Radio-Industrie, appl. 7 Jan 56, granted 11 Mar 57, pub. 26 Aug 57.

DESCRIPTORS: *Digital computers, Computers, Circuits, Magnetic cores, Control systems, Computer logic, Programming, Design.

The invention relates to a binary arithmetic unit capable of correlating with the highest degree of accuracy desired a predetermined binary value y with any value of a variable x in accordance with a given function. Said unit consists of as many bistable elements as values possibly assumed by the variable. These elements are arranged in a linear network or a matrix conventionally associated with one or two distribution networks. The output circuit of said network comprizes a number of conductors equal to the number of digits contained in the value y to be obtained. Each conductor is numbered and assigned to each of the digital places, said output conductors being connected to the output circuit of each of the flip-flop elements or independent therefrom. The interconnection law between the n^{th} conductor (that related to the n^{th}

digital place) and the position x flip-flop is as follows: if the n-place digit of a binary number y to be correlated with a value x of the variable is 1, an interconnection is provided, but if the corresponding figure is 0 no interconnection occurs. A simple grating shift permits transforming the law of correspondence between the values of the variable and the output yielded by the unit. (Author) (See also 61-28956)

Landa, S., Weisser, O., and Mostecky, J.
PROPERTIES OF SULFIDE CATALYSTS. VII. PREPARATION OF MERCAPTANS, THIOETHERS, SELENIUM MERCAPTANS, AND SELENIDES BY THE ADDITION OF HYDROGEN SULFIDE AND HYDROGEN SELENIDE TO OLEFINS (Über die Eigenschaften von Sulfid-Katalysatoren. VII. Darstellung von Mercaptanen, Thioäthern, Selenmercaptanen und Seleniden durch Anlagerung von Schwefelwasserstoff und Selenwasserstoff an Olefine) [1961] [21]p. (foreign text included) 26 refs.
Order from SLA $2.60 61-20521

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, p. 2197-2207.

DESCRIPTORS: *Sulfides, Catalysts, Catalysis, *Thiols, *Selenides, Synthesis, *Hydrogen compounds, *Ethylenes, Chemical reactions, Hydrogenation.

The author investigated the conditions involved in employing sulfide catalysts in the hydrogenation of sulfur and selenium, and in the addition of hydrogen sulfide and hydrogen selenide to an olefin. Sulfur hydrogenates quantitatively in the presence of an equivalent of molybden IV-sulfide and tungsten-IV sulfide, at 200°, selenium at 330-350°. Both sulfides are also active catalysts in the addition of hydrogen sulfide and selenium sulfide to double bonds. By these methods it is possible to prepare mercaptans, thioethers, selenium mercaptans and selenides quickly and easily in large quantities. (Author)

Perotto, Pier Glorgio.
A NEW ELEMENTARY COMPONENT FOR LOGICAL NETS ENDOWED WITH HIGH FACULTIES. [1961] 41p. 6 refs.
Order from SLA $4.60 61-18925

Trans. of reprint of Elettronica (Italy) 1958 [v. 7] no. 4, p. 1-12.

DESCRIPTORS: *Digital computers, Computers, Electrical networks, *Transducers, Computer logic, *Cybernetics.

MECHANICS

Colombo, Giuseppe.
CONCERNING A NOTABLE PHENOMENON IN THE FIELD OF COMBINATION NONLINEAR VIBRATIONS (Sopra un Notevole Fenomeno nel Campo delle Vibrazioni Non Lineari di Combinazione). [1961] 8p. 1 ref.
Order from SLA $1.10 61-20542

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fi[ziche] Mat[ematiche] e Nat[urali]. Rend[iconti] 1957 [ser. 8] v. 22, June, p. 726-730.

DESCRIPTORS: Oscillators, Vibrators, *Oscillations, *Vibration, Mathematical analysis.

By duly acting on a particular nonlinear dissipative system with a periodic external stress, without any quantitative restriction on frequency of the latter, an harmonic component on natural frequency of the vibrating system can be excited. Of course, said harmonic component can be far predominant over the harmonic component of frequency of the external stresses; only the natural harmonic component will then be appreciably noticeable and an asynchronous action phenomenon may therefore be regarded as present, being revealed for the first time in a vibrator with just one degree of freedom. The system is studied by employing a fast method that can be classified among perturbation methods and is a generalization of the Kryloff-Bogoliuboff method. (Author)

Goldenblat, I.I.
OVER EEN VRAAGSTUK BETREFFENDE DE MECHANIKA VAN EINDIGE DEFORMATIES VAN VASTE STOFFEN (On a problem of the mechanics of finite deformations of continuous media). 10 p. 2 refs. MTWL: 453 (Text in Dutch).
Order from OTS or ETC $1.55 61-17042

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 70, no. 6, p. 973-976.

DESCRIPTORS: *Solids, *Stresses, *Deformation, Mechanical properties.

Popov, Mintscho.
MODEL EXPERIMENTS ON ATOMIZATION OF LIQUIDS (Modellversuche mit Flussigkeitszerstäubung) tr. by S. Reiss. July 61, 33p. 9 refs. NASA Technical trans. F-65; AD-260 000.
Order from OTS $1.00 61-31567

Trans. of Rev[ue] de Mécanique Appliquée (Rumania) 1956, v. 1, no. 1, p. 71-88.

DESCRIPTORS: *Atomization, Drops, Hydraulic systems, Liquids, Fluids, *Fluid mechanics, Photographic analysis, Water impingement, Jets, Fuel sprays.

The similarity laws are determined for the atomization of liquids with constant material properties and to verify them by comparison model experiments. The analyses show that the effect of the viscosity of the gas was very small and that approximate model experiments can be carried out without considering the ratio M of the gas to liquid viscosity, a condition that is difficult to satisfy. The derived and experimentally verified similarity laws permit the modeling of the atomization processes of liquids whereby considerable simplifications in experimental procedure and generalization of the experimental data are made possible. (Author)

Tyugin, V. M.
THE POSSIBILITY OF USING BINARY MIXTURES FOR THE MODEL TESTING OF TURBINES. 4 Aug 61 [19]p. 6 refs. MCL-1040/1+2; AD-262 606.
Order from OTS or SLA $1.60 61-28377

Unedited rough draft trans. of Aviatsionnyi Institut, Moscow. Trudy (USSR) [1960] v. 119, p. 162-173.

DESCRIPTORS: *Turbines, Axial flow turbines, Centrifugal compressors, Model tests, *Test methods, Mixtures, Gases, Gas flow, Diffusion, Argon, Carbon tetrochloride, Centrifuge separation, Mathematical analysis, *Gas turbines, Combustion chamber gases, Simulation, Feasibility studies

The simulation of combustion gases by binary mixture of a high-molecular-weight gas (46% CCl_4) and a rare gas (54% Ar) in the model testing of gas turbines is discussed. The degree of stratification on the working blades and the thermodynamic equilibrium of the expansion of such mixtures are analyzed by means of a mathematical model. It is concluded that the use of binary mixtures of gases for model testing of turbines is valid. (ASTIA abstract)

Hydrodynamics, Hydraulics, and Hydrostatics

Kosterin, S.I.
ONDERZOEK NAAR DE INVLOED VAN DIAMETER EN STAND VAN EEN BUIS OP DE STROMINGSWEERSTAND EN HET STROMINGSBEELD VAN GAS-VLOEISTOFMENGELS (Investigation into the influence of the diameter and position of a pipe on the resistance and the figure of flow of gasliquid mixtures). 18 p. 9 refs. MTWL: 457. (Text in Dutch).
Order from OTS or ETC $1.85 61-17036

Trans. of Akademiya Nauk SSSR Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1949, no.12, p. 1824-1831.

DESCRIPTORS: *Gas flow, *Fluid flow, Aerodynamics. Hydrodynamics, *Resistance, *Pipes.

Piskunov, N.S.
OPLOSSING VAN EEN RANDOPGAVE VAN EEN NIETLINEAIRE PARABOLISCHE VERGELIJKING VOOR DE BEWEGING VAN VLOEISTOFFEN EN GASSEN IN EEN POREUS MEDIUM (Solution of a boundary problem for a non-lineair parabolic equation of motion of liquids and gases in a porous medium). 7 p. 4 refs. MTWL: 458 (Text in Dutch).
Order from OTS or ETC $1.55 61-17037

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 76, no. 4, p. 505-508.

DESCRIPTORS: *Gas flow, *Fluid flow, Porous materials, Non-lineair differential-equations.

Smirnov, N.I. and Li De Ep.
STROMING DOOR EEN LAAG VASTE DEELTJES. (Fluid flowthrough a layer of solid particles). 11 p. 9 refs. MTWL: 464 (Text in Dutch).
Order from OTS or ETC $1.85 61-17029

Trans. of Zhurnal Prikladnoĭ Khimii (USSR) 1951, v. 24, no. 1, p. 56-60.

DESCRIPTORS: *Boundary layer, *Particles, *Fluid flow, *Gas flow.

Wendel, Kurt.
HYDRODYNAMIC MASSES AND HYDRODYNAMIC MASS MOMENTS OF INERTIA (Hydrodynamische Massen und Hydrodynamische Massenträgheitsmomente). [1961] [106]p. 27 refs.
Order from SLA $9.60 61-20682

Trans. from Schiffbautechnische Gesellschaft, Berlin. Jahrbuch (Germany) 1950, v. 44.

Portions of this report will not reproduce well.

DESCRIPTORS: *Hydrodynamics, Moments, *Inertia, Fluid flow, Solids, Motion, Pressure, Potential theory, Roll, Pitch, Oscillations.

METALLURGY

Barbier, M.
HANDLING RAW MATERIALS BEFORE THEY REACH THE BLAST-FURNACE: SOME ASPECTS OF TRANSPORT AND DISCHARGE. Sep 61.
Order from BISI £ 3 15s BISI-2129

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Blast furnaces, Furnaces, *Materials, Transportation, Handling, *Ores.

Bokshtein, S. Z., Kishkin, S. T., and Moroz, L. M.
STUDY OF THE STRUCTURE OF METALS BY THE METHOD OF RADIOACTIVE ISOTOPES, CHAPS. 3-4. 24 Feb 61 [143]p. (80 figs. omitted) 15 refs.
MCL-736/1; AD-257 700.
Order from OTS or SLA $11.00 61-23866

Unedited rough draft trans. of Issledovanie Stroeniya Metallov Metodom Radioaktivnykh Izotopov, Moscow, 1959, chaps. 3-4, p. 95-193.

DESCRIPTORS: USSR, *Alloys, *Tracer studies, Isotopes, *Radioactive isotopes, Gamma rays, Beta particles, Microstructure, Metals, Diffusion, Autoradiography, Grains (Metallurgy)

Contents:
Experimental investigation of the chemical nonhomogeneity of alloys
Investigation of the diffusion in the metals by the methods of autoradiography (local character of the diffusion of elements).

Brochu, M.
THE WEIGHING OF WAGONS, LORRIES AND BELT CONVEYORS IN THE IRON AND STEEL INDUSTRY. Sep 61.
Order from BISI 7 10s BISI-2119

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Iron industry, *Steel industry, *Weighing, *Conveyors.

Cassani, R.
THE TRANSPORT OF RAW MATERIALS TO THE BLAST-FURNACE. Sep 61.
Order from BISI £3 10s BISI-2269

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Ores, *Transportation, *Blast furnaces, Furnaces.

Dilli, G.
THE UNEVEN FLOW OF ORE FROM SHIP TO BLAST-FURNACE, INFLUENCE OF SIZE OF SHIP AND OF THE HANDLING RATE AT THE STOCK-YARDS AT THE COAST AND IN THE WORKS. Sep 61.
Order from BISI £4 BISI-2103

Partial trans. of a paper from International Steelworks Conference [held at] Milan, June 61. [Proceedings]. A complete trans. is available from BISI £10 as BISI-1587 [1960].

DESCRIPTORS: *Ores, *Transportation, Blast furnaces, Furnaces.

Fister, W.
FLOW IN METALS AND POWER REQUIREMENTS OF DIFFERENT EXTRUSION TECHNIQUES. Oct 61.
Order from BISI £2 10s BISI-2383

Trans. of Techn[ische] Mitt[eilungen] (West Germany) 1961, v. 54, Feb, p. 77-78.

DESCRIPTORS: *Metals, Extrusion

Glinkov, M. A. and Choi En Sir.
THE EFFECT OF THE NUMBER OF INGOTS ON THE AERODYNAMICS AND HEAT EXCHANGE IN TOP FIRED SOAKING PITS. Oct 61.
Order from BISI £4 BISI-2376

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Met[allurgiya] (USSR) 1961 [no. 1] p. 184-190.

DESCRIPTORS: *Castings, Processing, *Heat transfer, Aerodynamics.

Hendus, Hans, Dawihl, Walther, and Bartsch, Gunnar.
PARTICLE SIZE AND GRATING DISTORTION OF TUNGSTEN POWDERS AND TUNGSTEN CARBIDE POWDERS. [1961] [24]p. 23 refs.
Order from SLA $2.60 61-18876

Trans. of Zeitschrift [für] Metallkunde (West Germany) 1957, v. 48, no. 12, p. 615-624.

DESCRIPTORS: *Powder metallurgy, *Tungsten compounds, *Carbides, *Grains (Metallurgy), Sintered alloys, Hardness, *Powders.

Howahr, Ernst.
THE ROLLING OF HEAVY AND MEDIUM PLATES. Rept. no. 162 of the Rolling-Mill Committee of the Verein Deutscher Eisenhüttenleute. [1961] [26]p. 10 refs.
Order from SLA $2.60 61-18537

Trans. of Stahl und Eisen (Germany) 1941, v. 61, 23 Jan, p. 73-83 and 30 Jan, p. 100-107.

DESCRIPTORS: *Metal plates, *Armor plate, Processing, *Rolling mills, Design.

Development of the four-high mill from the two-high and three-high mill, i.e., the combination of a two-high mill as a roughing stand with a four-high mill as a finishing stand, describing details of design and the development of the mechanical and the electrical components. (Author)

Iolko, M. V.
THE INFLUENCE OF SOME FACTORS ON THE PERFORMANCE OF CONVERTERS FOR BESSEMERIZING COPPER- AND COPPER-NICKEL MATTES. June 60 [7]p. [DSIR LLU] M 3154.
Order from OTS or SLA $1.10 61-27514

Trans. of Tsvetnye Metally (USSR) 1959, v. 32, no. 3, p. 19-22.

DESCRIPTORS: Blast furnaces, *Smelting, Ores, Copper, Copper compounds, Nickel alloys, Oxygen, Minerals, Steel, Cast iron.

An analysis is made of the principal factors affecting the efficiency and economics of the conversion process. The use of oxygen-enriched blast in converters is the most useful method of intensifying the bessemerization process.

Karlykov, D. M.
X-RAY INVESTIGATION OF THE SHORT DISTANCE ORDER OF LIQUID CADMIUM AMALGAMS. [1961] [10]p. 9 refs.
Order from OTS or SLA $1.10 62-13393

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1957, v. 2, no. 2, p. 43-48.

DESCRIPTORS: Liquids, *Cadmium, *Mercury alloys, Alloys, X-ray diffraction analysis.

An X-ray investigation was made of liquid solutions of cadmium in mercury. The X-ray photographs were obtained in copper radiation, monochromatized by means of a curved quartz crystal. The photographs were made from the free surface of the liquid alloy in a vacuum chamber with a radius of 38 mm. During the exposure of the photograph the temperature of the sample was kept at 70°C for solutions with 13.9, 16.5 and 18.0% Cd, and at 110°C for 30.8% Cd. The intensity curves of the scattering of X-rays by liquid cadmium amalgams differ from those for the pure metals only in the positions of the maximums, which occupy intermediate values between their positions in the pure components. With increase in the concentration of cadmium the height

of the first maximum is decreased, with a gradual erosion of the second maximum and a shift of the third maximum to the side of the least values of r. The coordination number is thereby increased from 8.3 to 8.8 units. The diffraction picture indicates that liquid cadmium amalgams belong to the group of solutions, in which the interatomic forces are such that combinations of atoms of the same type and of different types are equivalent.

Kocho, V. S. and others.
DYNAMIC CHARACTERISTICS OF OPEN-HEARTH FURNACES ACCORDING TO PRESSURE IN THE MELTING CHAMBER. Oct 61.
Order from BISI £3 10s BISI-2400

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chernaya Met[allurgiya] (USSR) 1961, no. 6, p. 168-174.

DESCRIPTORS: *Open hearth furnaces, Thermodynamics, Pressure, Combustion chambers.

Krokha, V. A.
SOME ASPECTS OF HARDENING IN UPSETTING. 1961, 6p. 1 ref.
Order from OTS or SLA $1.10 AEC-tr-4626

Trans. of Kuznechno-Shtampovochenoe Proizvodstvo (USSR) 1959 [v. 1] Dec, p. 11-14.

DESCRIPTORS: *Bolts, Hardening, Microstructure, Stresses, Deformation, Steel, Mechanical properties.

During cold heading of fasteners made of calibrated steel there is hardening of the metal in the head and in the stem. The degree of hardening both in the head and stem depends (given identical deformation) on the mechanical properties of the initial material, and will be therefore large when the original material is more plastic, and vice-versa. The greatest hardening at the top occurs in conical flat heads, and there is slightly less in cylindrical ones. There is somewhat less hardening in the middle of the cylindrical and flat head tops than on the periphery. The greatest hardening is found at the apex of the semi-circular heads.

Lafon, A. F., de.
EXAMPLE OF THE STUDY OF A PROBLEM OF INTERNAL TRANSPORT BY A SIMULATION METHOD. Sep 61.
Order from BISI £3 10s BISI-2120

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Ores, *Transportation, *Blast furnaces, Furnaces.

Lintig, H.-H. von.
TECHNICAL WEIGHING PROBLEMS IN THE FLOW OF MATERIALS IN A STEELWORKS. Sep 61.
Order from BISI £3 5s BISI-2102

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Steel industry, *Ores, Transportation, *Weighing.

Mathea, Alfred.
NOMOGRAMS FOR THE DETERMINATION OF ROLL FORCE, BASED ON THE EQUATION OF S. EKELUND. [1961] 12p. 17 refs.
Order from SLA $1.60 61-18786

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 20, p. 1383-1389.

DESCRIPTORS: *Rolling mills, Tests, Load distribution, Deformation, *Nomographs, Preparation.

The nomograms enable the mill engineer, the designer of rolling mills and the manufacturer of rolling mill drives to determine rapidly the permissible static and dynamic loads in a thin and thick sheet mill with the aid of an available or newly computed pass programme. It is also possible to discover the causes responsible for breakdowns in rolling mills from these nomograms. The use of the nomograms is explained in two examples. (Author)

Medover, B. I.
WELDING HEAT-RESISTANT NICKEL-BASE ALLOYS [AND] WELDING HIGH-STRENGTH AUSTENITIC STEELS. 7 Nov 60 [5]p. (1 fig. omitted). MCL-670/1; AD-256 148.
Order from OTS or SLA $1.10 61-27429

Unedited rough draft trans. of mono. Elektrodugovaya Svarka Austenitnykh Stalei (Arc Welding of Austenitic Steels) n.p., 1958, p. 81-84.

DESCRIPTORS: *Nickel alloys, *Arc welding, *Austenite, *Steel, Sheets, *Welding, *Stainless steel, Alloys, Welded joints, USSR, *Heat resistant alloy.

Conditions are given for welding heat-resistant Ni-base alloys by (1) Ar-shielded arc welding, (2) welding in CO_2, (3) submerged-arc welding, and (4) manual welding. Precipitation-hardened stainless steels in the form of thin sheets are welded primarily by the Ar-shielded arc method with a W or fusing electrode. For ADS 17-7PH steel containing more than 1% Al, a film of aluminum oxide forms on the joint necessitating the use of alternating current or replacing the Ar with He when welding with direct current. Steel 17-7PH can be welded without cracks. The presence of aluminum nitride causes porosity along the fusion line. In order to prevent this porosity, small amounts of Ti and Zr are introduced into the steel, these elements form nitrides more stable than the aluminum nitride. Preliminary hardening may be necessary before double heat-treatment in the case of welding thick 17-7PH steel in several passes when great structural alterations in the near-joint zone.

Mevis, M.
SYSTEMS OF TRANSPORT FOR SUPPLYING THE BLAST-FURNACE. Sep 61.
Order from BISI £3 BISI-2345

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Ores, *Transportation, *Blast furnaces, Furnaces.

Miculescu, R.
THE MODERN TECHNOLOGY OF ROLLING HEAVY RAILS. Oct 61.
Order from BISI £5 15s BISI-2286

Trans. of Met[alurgia si] Constr[uctia de] Masini (Rumania) 1959 [v. 11] no. 11, p. 934-939 and no. 12, p. 1033-1037.

DESCRIPTORS: *Railroad tracks, Manufacturing methods.

Mocek, J.
DESULPHURIZATION IN THE BASIC OPEN-HEARTH FURNACE. Oct 61.
Order from BISI £3 15s BISI-2255

Trans. of Hutn[icke] Listy (Czechoslovakia) 1959, v. 14, no. 5, p. 405-409.

DESCRIPTORS: *Desulfurization, *Open hearth furnaces, Furnaces, Slags.

Moskalenko, G. L.
THE USE OF ORGANIC SOLVENTS IN THE METALLURGY OF NICKEL AND COBALT. May 60 [10]p. (4 figs. 1 table omitted) 6 refs. [DSIR LLU] M 3157.
Order from OTS or SLA $1.10 61-27511

Trans. of Tsvetnye Metally (USSR) 1959, v. 32, no. 7, p. 40-46.

Portions of this report will not reproduce well.

DESCRIPTORS: *Organic solvents, Metallurgy, *Nickel, *Cobalt, Separation, Iron, Copper, Salts, Hydrochloric acid, Ethers.

The marked difference in the behaviour of nickel and cobalt (as well as iron and copper) salts in some organic solvents may be employed for the separation of nickel from cobalt (iron and copper). As selective solvents, complex ethers saturated with hydrogen chloride, in which no nickel salts dissolved, gave the best results. (Author)

Müller, H.
DIRECTIONS FOR THE ROLLING OF ALLOY STEELS. [1961] [6]p.
Order from SLA $1.10 61-18782

Trans. of Stahl u[nd] Eisen (West Germany) 1958, v. 78, no. 22, p. 1611-1613.

DESCRIPTORS: *Steel, *Iron alloys, Processing, *Steel castings, Castings.

Okhrimenko, Ya. M.
LAWS GOVERNING NON-UNIFORM DEFORMATION IN UPSETTING. 1961, 8p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-4624

Trans. of Kuznechno-Shtampovochnoe Proizvodstvo (USSR) 1959 [v. 1] Dec, p. 1-5.

DESCRIPTORS: *Steel, Deformation, Tests, Metal screws.

Experiments showed that the non-uniformity in deformation of high billets (test-pieces) during upsetting first increases, then declines.

Okonnikov, E. G.
ELECTRIC AND GALVANOMAGNETIC PROPERTIES OF DILUTED SOLID SOLUTIONS (Elektricheskie i Gal'vanomagnitnye Svoistva Razbavlennykh Tverdykh Rastvorov). 27 June 61 [12]p. (13 figs. 2 Eng. refs. omitted) 2 refs. MCL-1053/1; AD-261 809.
Order from OTS or SLA $1.60 61-27418

Unedited rough draft trans. of Akademiya Nauk SSSR. Institut Metallurgii. Trudy, 1960, no. 6, p. 32-40.

DESCRIPTORS: *Silver alloys, *Palladium alloys, *Iron alloys, *Tungsten alloys, Solids, Solutions, Resistance, Magnetic fields, USSR, Magnetic properties, Electromagnetic properties, Temperature, Thermoelectricity, Hall effect.

The electric resistance in diluted solid solutions of the Pd-Ag and Fe-W systems and the Hall effect in a Pd-Ag system were investigated. (Author)

Pepperhof, Werner and Bracksieck, Hans-Joachim.
RESEARCH INTO THERMAL RADIATION IN OPEN-HEARTH FURNACES. Rept. no. 439 of the Thermal Research [1961] [13]p. 14 refs.
Order from SLA $1.60 61-20600

Trans. of Stahl und Eisen (West Germany) 1956, v. 76, no. 22, p. 1453-1456.
Other translations are available from BISI £3 5s as BISI-1215 [1959] and from MT.

DESCRIPTORS: *Open hearth furnaces, *Thermal radiation, Heating, Gases, Fuel oils, Flames, Measurement, Color, Carbon black, Density

Prüss, D.
STATE OF DEVELOPMENT OF WEIGHING INSTALLATIONS IN GERMAN STEELWORKS. Sep 61.
Order from BISI £8 15s BISI-2101

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Weighing, *Steel industry, *Ores, Transportation, Electrical equipment.

Rabes, F.
RESULTS OF THE USE OF AUTOMATIC MEASURING AND REGULATING EQUIPMENT IN OPEN-HEARTH FURNACES. Oct 61.
Order from BISI £5 BISI-2324

Trans. of Neue Hütte (East Germany) 1961 [v. 6] Feb, p. 65-71.

DESCRIPTORS: *Open hearth furnaces, Furnaces, Control systems, Automatim.

Rudakov, L. M. and Gorshtein, I. I.
THE EFFECT OF SINTER HANDLING ON THE CHANGE OF ITS GRAIN COMPOSITION. Oct 61.
Order from BISI £1 15s BISI-2457

Trans. of Metallurg (USSR) 1961, v. 6, Apr, p. 4-6.

DESCRIPTORS: *Sinters, Handling, Grains (Metallurgy).

Septier, L. and Riviere, M.
PRINCIPAL OBSERVATIONS MADE DURING A VISIT TO EIGHT AMERICAN OPEN-HEARTH STEELMAKING PLANTS. Nov 61.
Order from BISI £1 BISI-2206

Trans. of Rev[ue de] Mét[allurgie] (France) 1960, v. 57 [no. 9] p. 797-803.
A partial trans. (p. 801-803) is available from SLA $1.10 as 61-10624 [1960] 5p.

DESCRIPTORS: *Open hearth furnaces, *Steel industry, Furnaces.

Weiner, K. L.
THE IRON ORE DEPOSITS OF THE STATE OF MINAS GERAIS (BRAZIL) AND THE BRAZILIAN IRON AND STEEL INDUSTRY. Oct 61.
Order from BISI £8 BISI-2389

Trans. of Radex-Rund[schau] (Austria) 1961, Aug, p. 623-640.

DESCRIPTORS: Iron, *Ores, *Geophysical prospecting, *Iron industry, *Steel industry, *Brazil.

Wicke, Ewalde, Hedden, Kurt, and Lüth, Gero.
REDUCTION OF FINE ORES IN TWO STAGES BY CARBON MONOXIDE (CO-C-IRON PROCESS). Rept. no. 318 of the Blast Furnace Panel of the Verein Deutscher Eisenhüttenleute. [1961] 15p. 10 refs.
Order from SLA $1.60 61-20616

Trans. of Stahl und Eisen (West Germany) 1959, v. 79, no. 3, p. 129-134.
Another trans. is available from BISI £4 10s as BISI-1256 [1959].

DESCRIPTORS: *Ores, Reduction, *Carbon compounds *Monoxides, Heating, *Iron, Recovery, Decomposition, Thermodynamics, Gases, Reaction kinetics, Iron compounds, Oxides, Coke, Coal

The outlines of a new direct reduction process (CO-O-iron process) carried out in 2 separate steps, based on the already well-known turbulent zone processes, are described. The first stage consists of the precipitation of carbon on the ore in a turbulent zone with carbon monoxide. In the second stage the product of the first stage is reduced by ordinary heating to iron during which some of the carbon monoxide used up in the first stage can be recovered. Carbon precipitation on tests (1st stage) gave an optimum temperature of 550°, at which more than 60% of the carbon monoxide was decomposed during its passage through the turbulence zone. The heat generation of the exothermal reaction proved to be adequate for maintaining the required temperature. The carbon precipitation was accompanied by a simultaneous reduction of the ore to about a Gross. FeO composition. The product of the first stage was rapidly converted into iron and carbon monoxide at temperatures above 800° (2nd stage). Comparison tests confirmed that reduction potential of the carbon precipitate on the ore was far greater than that of fine coke breeze or activated coal in a fine ore mixture. Several practical technical applications of the process are discussed with the aid of material and heat balances. (Author)

Wolff, H.
DEVELOPMENTS IN THE PRODUCTION OF HARD METALS. [1961] 4p (3 figs. omitted).
Order from SLA $1.10 61-18474

Trans. of Teknisk Tidskrift (Sweden) 1941, v. 71, 27 Dec, p. 549-551.

DESCRIPTORS: Metals, Wire, Sintering, *Ceramic materials, *Powder metallurgy, Powder metals.

Ferrous Metals

PROBLEMS IN DEVELOPING FERROUS METALLURGY IN THE REGIONS EAST OF LAKE BAIKAL. 10 Oct 61 [335]p. JPRS: 10593.
Order from OTS or SLA $19.75 61-28727

Trans. of mono. Problemy Razvitiya Chernoi Metallurgii v Rayonakh Vostochnee Oz. Baikal, Moscow, 1960, 190p.

DESCRIPTORS: *Metallurgy, *Iron, *Ores, Deposits, Preparation, Smelting, *Cast Iron, Metals, Production, Economics, Mining engineering, Blast furnaces, Electric furnaces, Operation, USSR.

Contents:
Foreword
Introduction
Perspective requirement of ferrous metals of regions east of Lake Baikal, by G. I. Lyudogovskii and V. S. Makarov
Main iron ore deposits of the territory east of Lake Baikal, by D. P. Serdyuchenko
Mining-engineering evaluation of iron ore deposits east of Lake Baikal, by A. V. Turkin and M. E. Mukhin
Enrichment and preparation of iron ore for blast furnace smelting, by N. V. Ovchininskii
The fuel base for ferrous metallurgy in the region east of Lake Baikal, by S. S. Dvorin and others

Auxiliary raw material resources, by V. L. Gerbov and V. A. Krylov
Power and lumber resources, transport and conditions for the development of food supply bases, by V. L. Gerbov and F. V. D'yakonov
Possible versions of location of metallurgical plants and conditions for construction and water supply, by N. V. Dmitriev and V. L. Gerbov
Cast iron smelting at new plants, by G. I. Lyudogovskii and A. A. Fedotov
Transportation indices for operation of new plants, by I. L. Chuv'yurov
Production cost of metal, by V. L. Gerbov and A. I. Aleksandrova
Capital investments and required working force, by V. L. Gerbov and S. P. Ponomarev
The economic effectiveness of construction of new metallurgical plants in Siberia, by N. V. Ovchininskii
Perspectives of development of cast iron smelting in electric furnaces using Garskoye deposit ores and the Zeya Ges power, by A. E. Probst and others
Conclusions.

Dahl, W. and Lueg, W.
MECHANICAL PROPERTIES AND STRUCTURE. Pt. 2 of The Effect of Rolling Conditions on the Properties of Low Carbon Hot Rolled Strip. [1961] [13]p. 11 refs.
Order from SLA $1.60 61-20620

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78] 11 Dec, p. 1793-1798.
Another trans. is available from BISI 4 as BISI-1275 [1959].

DESCRIPTORS: *Steel, Mechanical properties, *Microstructute, *Sheets, *Cast steel, *Rolling mills, Steel industry, Carbon, Grains (Metallurgy), Steel wire.

Fischer, W. A. and Wahlster, M.
EXPERIMENTAL BASIC CONVERTER WITH CONTINUOUS BATH TEMPERATURE MEASUREMENT AND END POINT DETERMINATION. Rept. no. 644 of the Steelworks Committee of V[erein] D[eutscher] E[isen]h[üttenleute]. [1961] [19]p. 23 refs.
Order from SLA $1.60 61-18446

Trans. of Stahl und Eisen (West Germany) 1958, v. 78, no. 10, p. 646-654 (Max Planck [Institut für Eisenforschung] (West Germany). Communication 764).

DESCRIPTORS: *Steel, Processing, Blast furnaces, Operation, Temperature, Oxygen, Carbon, Phosphorus, Manganese, Silicon, Nitrogen, Metallurgy.

The development of an experimental converter for 250 kg iron charge is described. It is shown that the course of the metallurgical reactions, both for air blowing and for blowing with oxygen enriched blast, agree to a considerable extent with that of works converters. In this experimental converter, experiments were undertaken to record the course of the reactions during the blowing of basic converter iron as a function of oxygen enrichment of the blast and temperature, for various iron compositions and lime charges. The behaviour of carbon, phosphorus, manganese, silicon and nitrogen is described. The measurement of temperature can be used as an end-point determination for the melt, if at the same time the differential curve of the recorded temperature curve is also plotted. (Author)

Gautier, A.
A CREEP MACHINE UNDER HIGH VACUUM AND FOR LOW STRESSES. [1960] [15]p. (6 figs. omitted) 1 ref.
Order from SLA $1.60 61-18397

Trans. of Revue de Métallurgie (France) 1958, v. 55, no. 1, p. 9-16.
Another trans. is available from BISI £3 as BISI-919 [1960].

DESCRIPTORS: *Steel, Creep, *Test equipment, Stresses.

Glaesener, E.
NEW METHOD OF VIBRATING CONVERTER BOTTOMS. [1961] [14]p.
Order from SLA $1.60 61-18378

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78] p. 1169-1175; Revue Universelle des Mines (France) 1958 [v. 101, ser. 9, v. 14] p. 261-269.

DESCRIPTORS: *Steel, Processing, *Vibrators, Design.

In order to stop the reduction in average bottom life, which occurred when starting up the new 30 ton converters, the Belval works of ARBED have developed a new method of vibrating via the needles. The paper describes the equipment used and the method of making the bottoms. (Author)

Hauttmann, Hubert.
HARDER BASIC BESSEMER STRUCTURAL STEEL KILLED WITH SILICON AND ALUMINIUM. Rept. no. 532 of the [Materials Committee] of the Verein Deutscher Eisenhüttenleute. [1961] [23]p. (42 figs. omitted) 16 refs.
Order from SLA $2.60 61-18521

Trans. of Stahl und Eisen (Germany) 1941, v. 61, 6 Feb, p. 129-136 and 13 Feb, p. 164-170.

DESCRIPTORS: *Steel, Mechanical properties, *Silicon, *Aluminum, Metallurgy.

Applicability for structural purposes of a steel with a tensile strength of at least 48 kg. per sq. mm. Disadvantages of the old steel St48 and their elimination by lowering the carbon content, by deoxidising with silicon and aluminium, and by raising the manganese content. Examination of various rolled products derived from such basic Bessemer heats with regard to tensile strength, yield point, elongation at fracture, notched bar impact strength, as rolled and after ageing, normalising and heat treatment, with regard to tensile-compression and transverse fatigue strength of smooth and drilled specimens, and with

regard to strength properties after arc welding. Effect of local cold-deformation and of notches established by grooved-bar bending and grooved-bar tensile tests. (Author)

Hempel, M. and Krug, H.
FATIGUE STRENGTH AND ELONGATION OF STEELS AT HIGH TEMPERATURES. [1961] [12]p. 24 refs.
Order from SLA $1.60 61-18555

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (Germany) 1942, v. 86, no. 39/40, p. 599-605.

DESCRIPTORS: *Steel, Heat treatment, *Temperature, *Fatigue (Mechanics), Deformation, Stresses.

Iweins, Robert.
MANUFACTURE OF CAST STEEL ROLLS AT THE OUGREE-MARIHAYE WORKS. [1959] 11p.
Order from SLA $1.60 61-20671

Trans. of Revue Universelle des Mines (France) [1945] Ser. 9, v. 1, no. [2/]3, p. 122-128.
Another trans. is available from BISI £4 10s as BISI-1230 [1959].

DESCRIPTORS: *Steel castings, France, Castings, Manufacturing methods, *Cast steel

Koch, W. and Abresch, K.
DETERMINATION OF THE OXYGEN CONTENT OF ALUMINIUM KILLED STEELS. Oct 61.
Order from BISI £4 5s BISI-2333

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 8 June, p. 795-800.

DESCRIPTORS: *Oxygen, Determination, Aluminum, *Steel.

Koch, W. and Müller, A.
THE STATE OF DEVELOPMENT OF TRANSPORT BY LORRIES AND OTHER MOBILE EQUIPMENT IN GERMAN STEELWORKS. Sep 61.
Order from BISI £5 10s BISI-2177

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings].

DESCRIPTORS: *Steel industry, Mobile, Transportation.

Rädeker, W.
THE BRITTLE FRACTURE BEHAVIOUR OF STEEL. Oct 61.
Order from BISI £5 15s BISI-1909

Trans. of Stahl [und] Eisen (West Germany) 1960, v. 80, 4 Aug, p. 1072-1083.

DESCRIPTORS: *Steel, Fracture (Mechanics).

Ricci, A.
WEIGHING IN TRANSPORT: TECHNICAL AND ADMINISTRATIVE ASPECTS. Sep 61.
Order from BISI £2 15s BISI-2147

Trans. of a paper from International Steelworks Transport Conference [held at] Milan, June 61. [Proceedings]

DESCRIPTORS: *Steel industry, Transportation, *Weighing.

Rossard, C. and Blain, P.
RESEARCH ON HOT DEFORMATION OF STEELS. I. FIRST RESULTS OF HOT TORSION TESTS (WITH DISCUSSION). Nov 61, 20 refs.
Order from BISI £9 BISI-2455

Trans. of Rev[ue de] Met[allurgie] (France) 1958, v. 55 [no. 6] p. 573-594.

DESCRIPTORS: *Steel, Deformations, Temperature.

Schmitt-Thomas, K. G., Borchers, H., and Seul, V.
EFFECT OF CARBON CONTENT, COLD DEFORMATION AND HEAT TREATMENT ON THE PROPERTIES OF ALUMINIUM-KILLED DEEP DRAWING STEEL STRIP. [1959] [22]p. 40 refs.
Order from SLA $2.60 61-20607

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78] 11 Dec, p. 1798-1808.
Another trans. is available from BISI £5 5s as BISI-1276 [1959].

DESCRIPTORS: *Steel, *Microstructure, Mechanical properties, *Carbon, *Deformation, *Heat treatment, Aluminum, Rolling mills, *Steel industry, *Sheets, Fracture (Mechanics) *Drawing (Machine processing)

Schenck, H., Schmidtmann, E., and Müller, H.
INVESTIGATIONS INTO THE ISOLATION OF GRAIN BOUNDARY MATERIALS AND INCLUSIONS IN STEELS BY THE THIN SECTION PROCESS. [1961] [12]p. 9 refs.
Order from SLA $1.60 61-18386

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1958, v. 29, no. 8, p. 479-484.

DESCRIPTORS: *Steel, Purification, Boundary layer, *Grains (Metallurgy), Crystals, Oxidation, Oxygen, Separation, Temperature.

The effect of a decarburizing anneal in wet hydrogen (3 to 5% H_2O) on the quality of the structural materials isolated by dissolving the base metal was investigated for plain carbon steels with from very low to high carbon contents. The fact that under the same conditions very pure iron shows almost no oxidation at the grain boundaries, but that each of the steels does not exhibit well-defined oxidation at the grain boundaries, indicated that decarburization of thin ground sections before isolation treatment oxidises the accompanying elements always present besides iron in steel, which have a relatively greater affinity for oxygen, and hence falsifies the experimental results. The metallic

matrix was removed by the chlorination process via the gas phase; subsequently the residues were determined microscopically without and after additional decarburization. A comparison of the oxides determined by the hot extraction process with the oxide contents in the isolate determined by weighing gave relatively low deviations for pure iron, but considerable deviations for steel C 15 and steel with about 0.8% C. Additional experiments were carried out to separate the base metal by solution in iodine-alcohol. Considerable differences were seen between the oxide amounts determined by the hot extraction process and the weighed amounts of oxide. The experiments in no case gave residues with connected grain boundary lattices. (Author)

Schulz, E. H. and Bischof, D. W.
RECENT DEVELOPMENT OF STEEL ST 52 FOR STEEL STRUCTURES. [1961] [14]p. (3 refs. omitted) 22 refs.
Order from SLA $1.60 61-18523

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[eitschrift] (Germany) [1940] v. 84, no. 14, p. 229-235.

DESCRIPTORS: *Steel, Standards, Structures.

Shishakov, N.A. and Moiseev, P.S.
ONDERZOEK VAN DE CORROSIEPRODUCTEN VAN IJZER MET RÖNTGEN- EN ELECTRONENDIFRACTIE (Electron-diffraction and x-ray investigation of the products formed in the corrosion of Fe). 14 p. 25 refs. MTWL: 455 (Text in Dutch).
Order from OTS or ETC $1.85. 61-17044

Trans. of Zhurnal Fizicheskoĭ Khimii (Ussr) 1941, v. 15, p. 101-108.

DESCRIPTORS: *Electron diffraction analysis, *X-ray diffraction analysis, *Iron alloys, Corrosion.

Tarmann, B.
CONTINUOUS CASTING OF SPECIAL STEELS. Nov 61.
Order from BISI £ 4 15s BISI-2317

Trans. of Radex-Rund[schau] (Austria) 1961, no. 3, p. 579-589.

DESCRIPTORS: *Steel, Casting.

Winterkamp, Hans.
PROCESSES FOR THE MANUFACTURE OF HOT ROLLED WIDE STRIP WITH SPECIAL CONSIDERATION OF THE STECKEL MILL. [1959] [34]p.
Order from SLA $3.60 61-20661

Trans. of Stahl u[nd] Eisen (West Germany) 1954, v. 74, no. 23, p. 1492-1502.
Another trans. is available from BISI £6 5s as BISI-1176 [1959].

DESCRIPTORS: *Rolling mills, Industrial production, *Steel industry, Cast iron, Milling machines, *Cast steel, *Steel tubing, *Sheets, *Metal plates.

Structural Metallurgy and Corrosion

Adzhemyan, Ts. A.
RESEARCH ON CORROSION AT THE STATE INSTITUTE OF APPLIED CHEMISTRY. [1961] 14p. 24 refs.
Order from OTS or SLA $1.60 61-18321

Trans. of mono. Konferentsiya po Korrozii Metallov (no. 2) (Conference on Corrosion of Metals (no. 2)). Trudy, v. 2, Moscow/Leningrad, 1943, p. 205-215.

DESCRIPTORS: *Corrosion research, USSR.

Research carried out in 1938-1940 at the State Institute of Applied Chemistry is reported, aiming at selecting materials for the equipment for the basic chemical industry for which research and design work is being carried out at this institute. The work covered: (1) solutions of salts, mainly chlorides; (2) handling of solutions and mixtures in production of sulfur compounds; (3) fluorine compounds; and (4) iodine and bromine industries. In addition, work was carried out on systematizing data on the stability of various materials to chlorine and on stability of nonferrous metals in different media. (Author)

Ageev, N. P.
THE TEMPERATURE DEFORMATION RATE FACTOR IN THE PLASTIC DEFORMATION OF METALS. Sep 61.
Order from BISI £4 BISI-2282

Trans. of Kuznechno-shtampov[ochnoe Proizvodstvo] (USSR) 1960 [v. 2] no. 7, p. 17-21.

DESCRIPTORS: *Metals, Deformation, *Plasticity, Temperature.

Becker, G.
CORROSION RESISTANT STEEL BOLTS. [1961] [6]p. 8 refs.
Order from SLA $1.10 61-18381

Trans. of Draht (West Germany) 1958, v. 9, no. 1, p. 13-15.

DESCRIPTORS: Corrosion inhibition, *Steel, *Bolts, *Corrosion.

Gorbunov, N. S. and Baryshanskaya, F. S.
CHROMIUM PLATING OF STEEL AND IRON IN THE GASEOUS PHASE. [1961] 1p.
Order from OTS or SLA $1.10 61-20305

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1942, v. 37, no. 9, p. 277-280.

DESCRIPTORS: Steel, Iron, *Chromium plating, Plating, *Corrosion inhibition, *Vapor plating.

Koch, Walter, Schrader, Angelica and others.
CHANGES IN THE STRUCTURE OF AUSTENITIC STEELS IN CREEP RUPTURE TESTS. Rept. no. 1143 of the Material Panel of the V[erein] D[eutscher] E[isen]h[üttenleute]. [1961] 22p. 17 refs.
Order from SLA $2.60 61-18383

Trans. of Stahl und Eisen (West Germany) 1958 [v. 78] no. 18 [p. 1251-1262] (Max Planck Institut [für Eisenforschung] (West Germany). [Communication] 776). Another trans. is available from BISI £ 6 10s as BISI-1070 [1960]; summary trans. available from SLA mi$1.80, ph$1.80 as 59-10159 [1959] [2]p.

DESCRIPTORS: *Steel, *Microstructure, *Creep, Carbides, Chromium alloys, Nickel alloys, Intermetallic compounds, Rupture, *Austenite, Stresses, Alloys, Eutectics, Titanium, Niobium, Molybdenum, *Crystal structure, *Heat resistant alloys, Grains (Metallurgy).

Nakagawa, R. and Otoguro, Y.
EFFECT OF DELTA FERRITE ON PROPERTIES OF CHROME-NICKEL STAINLESS STEELS. Aug 61, 1500 words.
Order from HB $4.50 HB-5173

Trans. of Tetsu to Hagane (Japan) 1961, v. 47, no. 3, p. 554-556.

DESCRIPTORS: *Stainless steel, Chromium alloys, Nickel alloys, Molybdenum alloys, Mechanical properties, Alloys, Microstructure.

Rausch, Werner.
THE CHEMICAL SURFACE TREATMENT OF STEEL STRIP TO GIVE A BETTER PROTECTION AGAINST CORROSION, GREATER ADHESIVE STRENGTH OF COATINGS AND FORMATION OF INSULATING LAYERS. [1959] 16p. 20 refs.
Order from SLA $1.60 61-20611

Trans. of Stahl und Eisen (West Germany) 1959 [v. 79] no. 6, p. 349-356.
Another trans. is available from BISI £6 as BISI-1300 [1959].

DESCRIPTORS: *Steel, *Stainless steel, Steel industry, *Corrosion inhibition, Coatings, Varnishes, Phosphate coatings, Plastic coatings, Adhesion, Electric insulation, Electrochemistry, Dielectrics.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Buchmann, Franz, Höfert, Manfred, and Röhler, Rainer.
RAPID RESPONSE MEASUREMENT OF DOSE RATE IN COMMERCIAL X-RAY APPARATUS. [1961] 6p. 4 refs.
Order from SLA $1.10 61-18864

Trans. of Z[eitschrift für] Angew[andte] Phys[ik] (West Germany) 1960, v. 12, no. 8, p. 351-353.

DESCRIPTORS: Dose rate, Measurement, *X-rays, Scintillation counters, *Radiation instruments.

An apparatus consisting of a chamber, which contains a scintillation liquid and which is connected to a photomultiplier, is suitable for an approximate dose-rate measurement of x-radiation within the range of 35 to 100 Kv. Inasmuch as the reading is taken with an electron beam oscillograph with a minute response delay, short radiation pulses and rapid changes in the dose rate can be determined. The method is used to measure the exposure times and the ripple of certain diagnostic apparatus. (Author)

Garibyan, G. M. and Mergelyan, O. S.
RADIATION OF A CHARGE MOVING PARALLEL TO THE INTERFACE OF TWO MEDIA. 28 Aug 61 [12]p. 8 refs. MCL-1032/1+2.
Order from OTS or SLA $1.60 61-28530

Unedited rough draft trans. of Akademiya Nauk Armyanskoi SSR [Erevan]. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1960 [v. 13] no. 2, p. 123-129.

DESCRIPTORS: *Particles, Motion, *Cerenkov radiation, Mathematical analysis.

The problem of the radiation of a charged particle moving parallel to the interface of two media was solved by a method proposed by one of the authors (Zhur. Eksptl. i Teoret. Fiz. 33; 1403, 1957) The use of this method makes it possible to solve this problem very simply and to obtain certain new results applicable mainly to the radiation in the medium where the particle itself is moving. (Author)

Jahn, W.
SPECIAL TYPES OF GLASS FOR USE IN ISOTOPE AND NUCLEAR RESEARCH LABORATORIES. [1961] 12p.
Order from ATS $23.80 ATS-62N55G

Trans. of Technische Mitteilungen (West Germany) 1960, v. 53, no. 2, p. 92-98.

DESCRIPTORS: *Glass, *Nuclear physics laboratories, Radiochemistry laboratories, Isotopes, Radioactive isotopes, Laboratories.

Starke, Kurt.
SEPARATION OF ELEMENT 93. [1961] 2p. 6 refs.
Order from SLA $1.10 61-20675

Trans. of die Naturwissenschaften (Germany) 1942, v. 30, 13 Feb, p. 107-108.

DESCRIPTORS: *Neptunium, Isotope separation.

Nuclear Engineering and Power

Andriot, J. and Gaussens, J.
THERMAL AND FAST BREEDER REACTOR POWER STATIONS PROGRAM: FUEL ECONOMICS, STORAGE PROBLEM, PLUTONIUM PRICE. Aug 61, 27p.
Order from OTS $0.75 AEC-tr-4508

Trans. of Conference Internationale de Recherche Operationnelle (no. 2) (International Conference on Operational Research, no. 2) [held at] Aix-en-Provence, 5-9 Sep 60 (Commissariat à l'Énergie Atomique (France) no. JaG/cm-SP/F/1-415).

DESCRIPTORS: *Electric power production, Costs, *Nuclear power plants, *Fast reactors, *Breeder reactors, Reactor fuels, *Plutonium, Storage, Economics.

A study was made of the economic aspect of electric power programs for the production of power by means of thermal and breeder (superregenerative) reactor power stations. The aim was to optimize overall costs of the operation of programs for producing electric power consisting of power stations with reactors of two types. The model should help to trace the movements of the optimum points for variation of the technical or economic parameters which govern the functioning of each of the two types of reactors. Two classes of programs are studied: (1) programs which have zero Pu stock, set up by using the whole supply of Pu available; and (2) programs aimed at producing an amount of electrical power fixed in advance and whose total cost we wish to minimize by determining the optimum structure using linear programming. A study of the various programs with definite values given to the parameters leads to the determination of the value that should be given to the Pu introduced in or extracted from the system of thermal reactors and breeders which make up the programs. It is found that the values which can be given to Pu increase at the beginning of the program under study, then tends to zero after a certain number of years which can reach several decades.

Komarskii, A. N.
COATING OF BUILDING STRUCTURES IN RADIOACTIVE LOCATIONS. 6 Oct 61 [18]p. 2 refs. JPRS: 8849.
Order from OTS or SLA $1.60 61-28786

Trans. of #Atomnaya Energiya (USSR) 1961, v. 10, no. 6, p. 597-605.

DESCRIPTORS: Buildings, *Structures, Floors, Walls, *Radiation damage, Countermeasures, *Coatings, Plastic coatings, Varnishes, Preparation, Costs.

This article considers problems of coatings of walls, floors, and ceilings of rooms of nuclear installations. It illuminates and summarizes the experience of using various types of coatings for radioactive rooms in the USSR, and makes recommendations as to their use. Data are quoted on the cost of various materials used for the coatings. (Author)

Sterman, I. S., Petukhov, V. V. and others.
ANALYSIS OF HEAT ECONOMY FOR ATOMIC ELECTRICITY POWER STATIONS WITH A GASEOUS HEAT CARRIER, tr. by J. K. Skwirzynski. 6 Jan 61 [22]p. 6 refs. [DSIR LLU] M. 3093.
Order from OTS or SLA $2.60 61-27549

Trans. of Teploenergetika (USSR) 1960, v. 7 [no. 9] p. 6-12.

DESCRIPTORS: *Nuclear power plants, *Electric power production, *Heat, Economics, Power plants, USSR.

A method is proposed for analysis of heat economy of atomic power stations with a gaseous heat carrier. The analysis is made at gas temperatures of 340, 375 and 400°C at the entry to the steam generator for two pressures cycle and at temperature of 375°C for a single pressure cycle. The results obtained when using cycles of a single and of two pressures are compared with each other. (Author)

PHYSICS

PHOTOELECTRON EMISSION, tr. by Esther Goldberg. [1961] [48]p.
Order from OTS or SLA $4.60 UCRL Trans-547(L)

Trans. of монография. Elektronnie Umnozhiteli, 2d ed., Moscow, 1957, chap. 1, p. 17-62.

DESCRIPTORS: Electrons, *Photoemission, *Photoelectrons, *Cathodes, *Photoelectric effect, Photosensitivity, Semiconductors, Dielectrics.

Information is surveyed on electrons in metals, semiconductors, and dielectrics; basic laws of photoeffect (photocurrent); spectral and integral sensitivity of photocathodes; selective photoeffects; the photoeffect of complex cathodes; and light and electrical curves of complex cathodes.

Dogadkin, B.A., Barmenev, G.M., and Reznikovskiĭ, M.M.
ONDERZOEK NAAR DE BETEKENIS VAN INTERMOLECULAIRE KRACHTEN BIJ HET MECHANISME VAN HOOGELASTISCHE DEFORMATIE. I. INTERMOLECULAIRE EFFECTEN EN DE KINETICA VAN HOOGELASTISCHE DEFORMATIES. (The importance of intermolecular forces in the mechanism of high-elastic deformation. 1. Molecular mechanism and an equation for the kinetics of high-elastic deformation). 14 p. 13 refs. MTWL: 463. (Text in Dutch).
Order from OTS or ETC $1.85 61-17028

Trans. of Kolloidnyĭ Zhurnal (USSR) 1949, v. 11, no. 5, p. 314-321.

DESCRIPTORS: *Elasticity, *Deformation, *Molecular Structure.

Motulevitch, G.P., Fabelinskiĭ, I.L., and Steingauz, L.N.
DE ABSOLUTE ACOUSTISCHE MICRORADIOMETER (The absolute acoustical microradiometer). 6 p. 2 refs. MTWL: 466. (Text in Dutch).
Order from OTS or ETC $1.55 61-17031

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 70, no. 1, p. 29-31.

DESCRIPTORS: *Acoustics, *Microwaves, Measurement.

Néel, Louis.
MAGNETISM: INTERPRETATION OF MAGNETIC PROPERTIES OF DYSPROSIUM AND ERBIUM (Magnetisme: Interpretation des Proprietes Magnetiques du Dysprosium et de l'Erbium). [1961] [15]p. (foreign test included) 12 refs.
Order from SLA $1.60 61-20088

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1956, v. 242, 4 Apr, p. 1824-1828 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Dysprosium, *Erbium, Rare earth elements, Magnetic properties, Temperature.

It is shown that the magnetic properties, particularly of dysprosium and erbium, at low temperature are probably due to a transition from a ferromagnetic to an anti-ferro-magnetic state under the influence of the thermal variation of the constant of magnetocrystalline anisotropy: in this manner it is possible especially to account for the thermal variation of the threshold field. (Author)

Spartakov, A. A. and Tolstoi, N. A
THE STABLE DIPOLE MOMENT OF PARTICLES OF AEROSOLS. [1961] 3p. 2 refs.
Order from OTS or SLA $1.10 61-16441

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1955, v. 29, Sep, p. 385.

DESCRIPTORS: *Dipole moments, *Aerosols, *Particles, Smokes, Polarization, Light transmission, Tobacco, Test methods, Electrical properties, Optics, Photoelectric effect.

Light passing through a thickness of 3 to 5 cm of tobacco smoke was modulated by a field of electric rectangular impulses. The curve of the modulation indicated periodic diminution of the transparency of the medium. The effect was observed with any direction of polarization of the light. Each change of sign of the field led to a repetition of the modulation wave. The reorientation of the smoke particles that caused the modulation of the light is possible only if the smoke particle is polar, i.e., has a stable dipole moment.

Acoustics

Borisov, Yu. Ya. and Makarov, L. O.
CERTAIN "RECORDS" IN ULTRA-ACOUSTICS (O Nekotorykh "Rekordakh" Ul'traakustiki). 1 Sep 61 [6]p. MCL-1229/1+2.
Order from OTS or SLA $1.10 61-28497

Unedited rough draft trans. of mono. Ul'trazvuk v Tekhnike Nastoyashchego i Budushchego (Ultrasonics in the Technology of the Present and Future) Moscow, 1960, p. 77-80.

DESCRIPTORS: *Ultrasonics, *Acoustics, USSR.

Kuttruff, H.
PROPERTIES AND ANALYSIS OF REVERBERATION CURVES. [1961] 11p. 9 refs.
Order from SLA $1.60 61-20535

Trans. of Acustica (Switzerland) 1958, v. 8, p. 273-280.
Another trans. is available from ATS $14.80 as ATS-90N52G [1961] 11p.

DESCRIPTORS: Vibration, *Sound transmission, Acoustics, *Reverberation.

An exposition of reverberation phenomena in enclosed spaces is given and hence the characteristic bending of reverberation curves is predicted. The slope at the commencement of such a curve is shown to be proportional to the weighted arithmetic mean of the damping factors of all the relevant natural vibrations. The conclusions which can be so drawn are illustrated by examples. The statistical deduction of the reverberation expression leads to the result that when the individual walls show different absorption possibilities, arithmetic averaging of the absorption factors ensues. (Author)

Kuttruff, H.
PROPERTIES AND ANALYSIS OF REVERBERATION CURVES [Eigenschaften und Auswertung von Nachalkurven]. [1961] 11p.
Order from ATS $14.80 ATS-90N52G

Trans. of [Akustische Beihefte] (Switzerland) 1958 [no. 1] p. 273-280.

DESCRIPTORS: Vibration, *Sound transmission, acoustics, *Reverberation.

Molecular Physics and Spectroscopy

Benoit, H.
CONTRIBUTION TO THE STUDY OF THE KERR EFFECT EXHIBITED BY DILUTE SOLUTIONS OF RIGID MOLECULES. [1961].
Order from AC $37.50

Trans. of Annales de Physique (France) 1951 [ser. 12] v. 6, p. 561-609.

DESCRIPTORS: *Molecules, Solutions, Refraction, Relaxation time, Molecular rotation, *Electric fields, Optics.

This study furnishes the following results: (1) The birefrigence disappeared exponentially with a time of relaxation 1/6 D (D being the constant of diffusion of rotation of molecules) independently of the initial conditions. (2) The law of establishment of the field depends on the nature of the couple of orientation and there can be deduced from the study of the curve DELTAn(t) the ratio between the terms of orientation resulting the one from the action of the electric field on the permanent moment and the other from the reaction of an induced moment. (3) For t infinite there are found the classical formulas of the Kerr effect at direct current. (AC abstract)

Ivanov, V.I. and Zakharov, B.A.
DE VERHOUDING TUSSEN DE MOLECULAIRE GEWICHTEN VAN CELLULOSEPRODUCTEN, BEPAALD VOLGENS DE VISCOSITEITS- EN VOLGENS DE SEDIMENTATIE- EN DIFFUSIE-SNELHEIDSMETHODE (Ratio of molecular weights of cellulose products, calculated from viscosity and from the rates of sedimentation and diffusion). 8 p. 6 refs. MTWL: 443 (Text in Dutch).
Order from OTS or ETC $1.55 61-17049

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 72, no. 6, p. 1063-1065.

DESCRIPTORS: *Molecular weight, *Cellulose, Viscosity, Sedimentation, Diffusion.

Optics

Feklistove, E. M.
PHOTOELECTRIC MICROSCOPES. [1961] 8p. 7 refs.
Order from OTS or SLA $1.10 61-18312

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Geodeziya i Aerofotos"emka (USSR) 1959, no. 2, p. 7-13.

DESCRIPTORS: USSR, *Microscopes, Optical equipment, Design, Operation, *Photoelectric cells, Microphotometers, *Electron microscopes, Light.

The design and operation principles are examined for the photoelectric phase microscope, the phase-pulse system of photoelectric microscope, and photometric photoelectric microscopes.

Steigerwald, K. H.
A NEW TYPE OF SYSTEM OF PRODUCING BEAMS FOR THE ELECTRON MICROSCOPE. 21 Aug 61 [12]p. 2 refs.
Order from SLA $1.60 61-20700

Trans. of Optik (West Germany) 1949, v. 5, no. 8/9, p. 469-478.

DESCRIPTORS: *Electron microscopes, *Electron beams, Production, Triodes, Cathodes.

The usual triode system, with hot cathode, Wehnelt shield and anode, used for beam production in the electron microscope, has been remodeled. By suitable shaping of the Wehnelt electrode so that with regard to illumination intensity, illumination aperture and lifetime it is equivalent to a system working with a condenser and moreover offers the advantage of very small beam current and simple adjustability. (Author)

Zhuze, V. P. and Ryvkin, S. M.
THE "EXCITON" CHARACTER OF ABSORPTION OF LIGHT AND THE IMPURITY PHOTOCONDUCTIVITY (Zksitonnyi Kharakter Pogloshcheniya Sveta i Primesnaya Fotoprovodimost'). [1961] [8]p. (foreign text included) 11 refs.
Order from OTS or SLA $1.10 61-18798

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 77, no. 2, p. 241-244.

DESCRIPTORS: *Light, Absorption, Impurities, *Copper compounds, *Oxides, *Photoconductivity, Excitation.

Solid State Physics

Haessner, Frank.
DETERMINATION OF THE FIBRE TEXTURES OF WIRES BY MEANS OF A COUNTER-TUBE GONIOMETER. [1961] [9]p. 4 refs.
Order from SLA $1.10 61-18389

Trans. of Z[eitschrift für] Metallkunde (West Germany) 1956, v. 47, no. 9, p. 649-652.

DESCRIPTORS: *Goniometers, *Aluminum wire, *Wire, Crystal structure.

By using an auxiliary head, which may easily be attached to a counter goniometer suitable for determining sheet textures, the fibre textures of wires may readily be investigated. The investigation process may be adapted to meet the special requirements by various movements of the object which may be combined or performed separately. The process is illustrated and the results discussed on the recorded curves for the textures of a hard drawn and a re-crystallized aluminium wire. (Author)

Hartmann, Randolf J. and Macherauch, Eckard.
INVESTIGATIONS OF SLIP PROCESSES IN SINGLE CRYSTALLITES OF POLYCRYSTALLINE COPPER SAMPLES (Untersuchung von Gleitvorgangen in Einzelkristalliten Vielkristalliner Kupferproben). [1961] [25]p. (foreign text included) 11 refs.
Order from SLA $2.60 61-20085

Trans. of Z[eitschrift fur] Metallkunde (West Germany) 1960, v. 51 [no. 12] p. 694-699.

DESCRIPTORS: *Copper, Crystals, *Single crystals, Deformation, Shear stresses, Plastic flow.

The slip planes activated during tensile deformation of polycrystalline pure copper specimens have been determined from slip band direction and crystallite orientation. In many cases, slip took place only in others than the primary system. The effective shearing stress in the observed slip systems was compared to the shearing stress in the primary system. Nonoctahedral slip has been observed in two out of sixty cases. (Author)

Köster, W. and Kochendörfer, A.
ELASTIC PROPERTIES [AND] PLASTIC DEFORMATION AND RECRYSTALLIZATION. 14 Feb 61 [45]p. 146 refs. MCL-710/1+2; AD-260 669.
Order from OTS or SLA $4.60 61-28421

Trans. of mono. Fiat Review of German Science 1939-46, Stuttgart, n.d., General Metallurgy, p. 41-47 and 125-145.

DESCRIPTORS: Solid state physics, Metals, Alloys, Crystals, Crystal structure, *Metallic crystals, Single crystals, Lattices, Deformation, *Elasticity, *Plasticity, Stresses, Shear stresses, Thermal conductivity *Bibliography, Crystallization, Germany.

Elastic Properties: Temperature dependence of the modulus of elasticity concentration dependence of the modulus of elasticity influence of mechanical and thermal treatment on the modulus of elasticity influence of the ferromagnetic state on the modulus of elasticity measurements on single crystals and determination of the modulus of elasticity. Plastic Deformation And Recrystallization: Plastic deformation, solidification, recovery (Homogeneous and inhomogeneous deformation of single crystals, deformation of polycrystals, deformed state, and endurance limit at unidirectional and alternating stress) and recrystallization (Recrystallization in worked bodies and unworked bodies).

Köster, Werner, Bangert, Lothar, and Hafner, Jobst.
INTERNAL FRICTION AND SHEAR MODULUS OF COLD WORKED AND RE-CRYSTALLIZED GOLD. [1961] [15]p. 2 refs.
Order from SLA $1.60 61-18421

Trans. of Zeitschrift für Metallkunde (West Germany) 1956, v. 47, no. 4, p. 224-228.

DESCRIPTORS: *Gold, Processing, Internal friction, Shear stresses, Deformation, Temperature, Grains (Metallurgy), *Crystal structure.

Cold worked and re-crystallized gold was investigated to determine the internal friction and shear modulus in relation to grain size and degree of cold work. The internal friction-temperature curves of cold worked gold are displaced to higher internal friction values with an increasing degree of cold work and refinement of the grain. The maximum of internal friction as a result of grain boundary viscosity is suppressed as the amount of deformation increases this being more pronounced with the fine grain than with the coarse grain. (Author)

Schram, A.
THE STRUCTURE OF POLYETHYLENE. [1961] 11p. (11 figs. omitted) 19 refs.
Order from SLA $1.60 61-20652

Trans. of Kolloid-Zeitschrift (West Germany) 1957, v. 151 [no. 1] p. 18-24.
Another trans. is available from SLA mi$1.80, ph$1.80 as 59-15927 [1959] 7p.

DESCRIPTORS: *Ethylenes, *Polymers, *Crystal structure, Synthesis, Melting, Cooling, Crystallization, Thermochemistry, Crystals, Pressure, Elastic shells, Stresses, Surfaces, Internal friction.

Seeger, A., Berner, R., and Wolf, H.
THE EXPERIMENTAL DETERMINATION OF STACKING FAULT ENERGIES IN FACE-CENTERED CUBIC METALS. [1961] [25]p. 39 refs.
Order from SLA $2.60 61-18295

Trans. of Zeitschrift für Physik (West Germany) 1959, v. 155 [no. 2] p. 247-262.
Other translations are available from FRI as FRI Trans-135 and from ATS $19.95 as ATS-32L35G [1959] 14p.

DESCRIPTORS: *Metallic crystals, *Crystal structure, Lattices, Crystals.

Thermodynamics

Adrianov, V. N. and Shorin, S. N.
HEAT TRANSFER IN THE CHANNEL FLOW OF RADIATING COMBUSTION PRODUCTS. [1961] [22]p. 12 refs.
Order from OTS or SLA $2.60 61-20714

Trans. of Teploenergetika (USSR) 1957 [v. 4] no. 3, p. 50-[54].

DESCRIPTORS: Heat exchangers, Combustion chambers, *Heat transfer, Mathematical analysis.

The analytical solution of the problem of radiation transfer in the flow of a radiating medium in a cylindrical channel is compared with results of experimental research on composite heat transfer.

Kholev, S. R.
EQUILIBRIUM PARAMETERS OF A STRONG SHOCK WAVE IN MONOATOMIC GASES AND HYDROGEN (Ravnovesnye Parametry Moshchnoi Udarnoi Volny v Odnoatomnykh Gazakh i Vodorode). 21 July 61, 10p. (9 figs. omitted) 8 refs. H-9297; JPRS (R-1768-D).
Order from OTS $0.50 61-31638

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1959, no. 4, p. 28-37.

DESCRIPTORS: *Gases, Xenon, *Hydrogen, Deuterium, Tritium, *Shock waves, Ionization, Excitation, Thermodynamics, Mathematical analysis.

A procedure is developed for calculating the characteristics of a gas behind a strong shock wave, taking ionization and excitation of atoms into account. The results of calculations for xenon, hydrogen, deuterium, and tritium are given.

Ruso, R. and Kopsala, A.
APPARATUS FOR DETERMINING THERMAL CONDUCTIVITY USED AT THE STATES INSTITUTE FOR TECHNICAL RESEARCH. [1961] 15p. (12 figs. omitted).
Order from SLA $1.60 61-18759

Trans. of unidentified mono. pub. by The States Institute for Technical Research, Helsinki, 1960.

DESCRIPTORS: *Thermal conductivity, Determination, Temperature, Conductivity.

Four devices for measuring thermal conductivity are described which have been in use in the Laboratory of Heating Technology of the State Institute for Technical

Research. They are based on the principle of stationary heat flow. With these devices it is possible to measure the coefficient of thermal conductivity of most building materials under various test conditions corresponding to those existing in practice.

Styrikovich, M. A., ed.
HYDRODYNAMICS AND HEAT TRANSFER DURING BOILING IN HIGH PRESSURE BOILERS. June 61, 272p. 75 refs.
Order from OTS $3.50 AEC-tr-4490

Trans. of mono. Gidrodinamika i Teploobmen pri Kipenii v Kotlakh, Moscow, 1955.

DESCRIPTORS: Gases, Liquids, Mixtures, Experimental data, *Hydrodynamics, *Heat transfer, *Boiling, *High pressure research, *Boilers, Fluid mechanics, Steam, Boiler tubes, Electric power production, Failure (Mechanics), Evaporation, Temperature, Thermodynamics.

Contents:
Introduction
Regimes and types of flow for an air-water mixture in vertical tubes, by B. K. Kozlov
The flow mechanism of a two-phase mixture in a vertical tube, by A. A. Armand
Calculation of gas-liquid-mixture flow in vertical tubes, by V. A. Arkhangel'skii
Analysis of experimental data on stream- and gas-liquid mixtures in terms of dimensionless quantities and the methodology of the experiment, by S. G. Teletov
Test results in study of high-pressure steam-boiler circulation, by D. F. Peterson
Boiler breakdown at electric power stations due to disruptions in circulation, by V. N. Noev
Effective circulation heads in steam tubes at high steam pressures, by M. A. Styrikovich and G. E. Kholodovskii
Investigation of flow pulsations in tubes of the evaporation section of radiant boilers, by A. A. Davidov
The occurrence of pulsations in the evaporation tubes of steam boilers, by I. E. Semenovker
The generalization of experimental data pertaining to heat transfer during boiling, by M. A. Kichigin and N. Yu. Tobilevich
Investigation of the features occurring in the heat-transfer process during boiling in tubes, by N. Yu. Tobilevich and B. A. Eremenko
An investigation of the operational temperature regime in a vertical evaporator tube at superhigh pressures, by M. A. Styrikovich and M. E. Shitsman
The temperature regime for operational horizontal and inclined steam-generating tubes at high pressures, by M. A. Styrikovich and Z. L. Miropol'skii.

Wave Propagation

Jouget, M.
EFFECTS OF DEFECTS IN A WAVEGUIDE ON THE TRANSMISSION OF A TE_{01} WAVE. [1961] 35p. 2 refs.
Order from SLA $3.60 61-20536

Trans. of Câbles et Transmission (France) 1961, v. 15, no. 1, p. 3-26.
Another trans. is available from ATS $52.85 as ATS-91N52F [1961] 35p.

DESCRIPTORS: *Waveguides, Deformation, *Electromagnetic waves, Transmission, Attenuation.

When a TE_{01} wave propagates in a guide, the defects, localized at the junctions of the successive elements, generate parasitic waves. The amplitude of these waves and the corresponding powers are determined by means of the theory of random distribution of defects. The losses which ensue and the increase in attenuation which results for a TE_{01} wave are deduced. The mean values for a large number of sections contained between amplifiers and the probable deviations relative to these mean values are calculated. Numerical calculations are made for the case of a guide 50 mm in diameter and having a frequency of 35,000 megacycles. Finally, the phenomena which could occur if the distribution of defects were not random are studied. (Author)

Koch, Bernhard.
VELOCITY MEASUREMENTS USING THE ELECTROMAGNETIC DOPPLER EFFECT, PTS. 1-2 (Geschwindigkeitsmessung mit Hilfe des Electromagnetischen Doppler-Effektes, teil 1-2). [1961] [35]p. (foreign text included) 61 refs.
Order from SLA $3.60 61-20445

Trans. of Archiv fur Technisches Messen [und Industrielle Messtechnik] (West Germany) 1960, v. 293, no. V 143-4, p. 109-112 and v. 295, no. V 143-5, p. 153-156.

DESCRIPTORS: *Electromagnetic waves, Frequency, Velocity, Measurement, *Doppler systems, Wave transmission.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACTIVITIES OF THE ACADEMY OF SCIENCE USSR. 23 Aug 61 [92]p. JPRS: 4910.
Order from OTS or SLA $8.60 61-28048

Trans. of [Akademiya Nauk SSSR. Sibirskoe Otdelenie]. Izvestiya, 1957, no. 8, p. 67-129 and 155-162.

DESCRIPTORS: *Scientific organizations, *Scientific research, USSR.

Contents:
The Moldavian affiliate of the Academy of Science USSR, by Ya. S. Grosul
A study of the productive forces of Eastern Siberia, by V. A. Krotov
An outpost of science in the Far East, by V. G. Bykov and others

On the activity of the Yakutsk affiliate of the USSR, by N. V. Cherskii
On certain results of the activity of the Kazan affiliate of the Academy of Science USSR, by K. V. Nikonorov
The Kola affiliate of the AN USSR and the development of the productive forces in the Murmanskaya oblast', by A. V. Sidorenko
Some results of the scientific research in the Karelia affiliate of the AN USSR, by V. S. Slodkevich
The scientific activity of the affiliate of the AN USSR, by P. P. Vavilov
The development of scientific research in the Dagestan affiliate AN USSR, by Kh. I. Amirkhanov.

DECISIONS OF THE HIGHER CERTIFICATION COMMISSION ON ACADEMIC DEGREES AND TITLES. 28 Aug 61 [13]p. JPRS: 8827.
Order from OTS or SLA $1.60 61-28061

Trans. of Ministerstvo Vysshego i Srednogo Spetsial'nogo Obrazovaniya. Byulleten' (USSR) 1961, no. 3, p. 26-29.

DESCRIPTORS: *Scientific personnel, *Medical personnel, Personnel, USSR.

Names of the men are given who were confirmed in the ranks of professor, docent, senior scientific worker, and doctor of science.

DECISIONS OF THE HIGHER CERTIFICATION COMMISSION ON ACADEMIC DEGREES AND TITLES. 22 Sep 61 [41]p. JPRS: 10244.
Order from OTS or SLA $4.60 61-28775

Trans. of Ministerstvo Vysshego i Srednogo Spetsial'nogo Obrazovaniya. Byulleten' (USSR) 1961, no. 4, p. 16-32.

DESCRIPTORS: *Scientific personnel, Personnel, Education, USSR.

Names of the men are listed who were confirmed on 15 June to 9 July 1960 in the academic ranks of professor, docent, senior scientific worker, and doctor of science. The specialty of each man is also given.

SCIENCE AND TECHNOLOGY IN THE LATVIAN SSR ON ITS TWENTIETH ANNIVERSARY. 18 Oct 61 [193]p. 153 refs. JPRS: 10529.
Order from OTS or SLA $13.50 61-28756

Trans. of Akademiya Nauk Latviiskoi SSR. Izvestiya, 1960, no. 7(156) p. [1]-75, 147-161, 163-171, 173-178, 183-212, 219-227.

DESCRIPTORS: *Science, *Scientific research, Communism, Growth, Biology, Microbiology, Medical research, Nuclear engineering, Mechanics, Geology, Chemists, Tests, Ketones, Synthesis, Wood, Chemistry, Technological intelligence, USSR.

Contents:
A noteworthy date
The Academy of Sciences on the 20th anniversary of Soviet Latvia, by K. Plaude
The flourishing of general sciences in the Latvian SSR, by K. Strazdyn'
Progress in physical and technical science in Soviet Latvia, by A. Malmeisters
Achievements of chemists in the twenty years of Soviet Latvia, by A. Kalnins
Development of biological sciences in Soviet Latvia, by A. Ozols
Microbiology during Soviet Latvia's twenty years, by A. Kirhenstein
Pathways and results of development of medical science in the Latvian SSR 1940-60, by A. Smidt
On experience in introducing radioactive isotopes and nuclear radiations into establishments of the national economy of the Latvian SSR, by G. Gaile
Soviet Latvian scientists' progress in the field of mechanics, by Ya. Panovko
Some results of the investigation of beta-diketones in the Academy of Sciences of the Latvian SSR, by G. Vanag
Investigations of the chemistry of wood and its components as a theoretical basis for the chemical technology of wood, by P. Odintsov
Geology of Soviet Latvia for 20 years, by K. Springis
Forestry and the national economy, by A. Kalnin'sh and A. Kundzin'sh.

SCIENTIA SINICA (CHINESE PEOPLE'S REPUBLIC) 1961, VOL. 10, NO. 5, p. [491]-619. Sep 61 [132]p. 121 refs.
Order from OTS or SLA $10.50 62-13300

DESCRIPTORS: *Science, Periodicals, China, *Mathematics, *Solid state physics, *Physiology, *Neurology, *Anatomy, *Oceanography, *Metallurgy.

Contents:
Contributions to the theory of conjugate nets in projective hyperspace, II, by Su Buchin, p. 491-498, $1.10 (originally pub. in [Shu Hsueh Hsueh Pao] (Chinese People's Republic) 1961, v. 11, no. 1, p. 41-46
On the maximin probability of cyclic random inequalities, by Chang Li-chien, p. 499-504, $1.10
Theory of the parametric oscillation of magneto-acoustic modes, by Li Yin-yuan and others, p. 505-521, $1.60 (originally pub in [Wu Li Hsueh Pao] (Chinese People's Republic) 1960, v. 16, no. 8, p. 448-461)
Vliyanie Funktsional'nykh Sostoyanii Kory Golovnogo Mozga na Deyatel'nost' Zheludochnoi Zhelezy, by Lyu Tai-fon, p. 522-537 $1.60 (originally pub. in Pei Ching Ta Hsueh Hsueh Pao: Tzu Jan K'o Hsueh] 1960, v. 6, no. 1)
An analysis of fibre constitution of optic tract of cat, by Chang Hsiang-tung and Cheng Tse-huei, p. 538-556, $1.60
Interneuronal synapses in the human stellate ganglion, by Tcheng Kuo-tchang, p. 557-568, $1.60
Proposed spectra for ocean swell, by S. C. Wen, p. 569-591, $2.60 (originally pub. in [Shan Tung Hai Yang Hsueh Yuan Hsueh Pao] (Chinese People's Republic) 1960, no. 1, p. 44-64)

Izotermicheskoe Razlozhenie Molibdenosoderzhayushchei Nerzhaveyushchei Stali, by Lyu Zya-lo and Chzhuan Yui-chzhi, p. 592-619, $2.60.

SCIENTIA SINICA (CHINESE PEOPLE'S REPUBLIC) 1961, VOL. 10, NO. 6, P. [621]-754. Oct 61 [137]p. 135 refs.
Order from OTS or SLA $10.50 62-13301

DESCRIPTORS: *Sciences, Periodicals, China, *Mathematics, *Physics, *Nuclear physics, *Chemistry, *Geology, *Geography, Fourier analysis, Functions, Activity coefficient, Conductors, Oceanography, Carbon tetrachloride.

Contents:
Fourier analysis on unitary group. III. The Cesaro summability, by Kung Sun, p. 621-624, $1.10
Ustoichivost' nelineinykh sistem avtomaticheskogo reguliorvaniya, by Chzhan Bin-gen', p. 625-631, $1.10
A note on interpolation of a certain class of functions, by Wang Yuan, p. 632-636, $1.10
Metod modelirovaniya v statisticheskoi fizike, Chen' Chun'-syan' and Chen' Shi-gan', p. 637-652, $1.60 (originally pub. in [Wu Li Hsüeh Pao] (Chinese People's Republic) 1961, v. 17, p. 77-88)
Energeticheskii Spektr π-Elektronov v Dlinnykh Tsepyakh Sopryazhennykh Svyazei, by Khao Bai-lin' and others, p. 653-675, $2.60 (originally pub. in [Wu Li Hsüeh Pao] (Chinese People's Republic) 1961, v. 17, p. 289-303).
Properties of rectangular and trough line with circular inner conductor, by Lin Wei-guan, p. 676-686, $1.60
The probability of the $\pi^- \rightarrow \pi + e + \bar{\nu}$ decay in the case of nonconserved weak current, by Dai Yuan-ben, p. 687-699, $1.60 (originally pub. in [Wu Li Hsüeh Pao] (Chinese People's Republic) 1961, v. 17, no. 2, p. 89-98)
Studies on the activity coefficients of non-electrolytes in aqueous salt solutions. IV. The effects of inorganic salts on the solubilities of carbon tetrachloride in water, by Liu Jui-ling and Huang Tzu-ch'ing, p. 700-710, $1.60
Modifizierte Kishner-Wolff-Reduktion, by Huang-minlon, p. 711-725, $1.60
Problems of classification of the Cambrian system in China, by Y. C. Sun, p. 726-733, $1.10
The braided stream of the lower yellow river, by Chien Ning, p. 734-754, $2.60.

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS OF THE USSR. 3 Oct 61 [26]p. JPRS: 10404.
Order from OTS or SLA $2.60 61-28888

Trans. of Akademiya Nauk Kazakhskoi SSR, Alma Ata. Vestnik, 1961 [v. 17] no. 6(195) p. 38-52 and 103-104.

DESCRIPTORS: *Scientific personnel, Personnel, *Scientific organizations, Literature, USSR.

Contents:
The Kazakh SSR Academy of Sciences in 1960, by Sh. Ch. Chokin
On the organization of a literature and arts institute.

Chikoidze, G. B.
RUSSIAN-GEORGIAN MACHINE TRANSLATION ALGORITHM. Foreign Developments in Machine Translation and Information Processing no. 28. 22 May 61 [11]p. JPRS: 8313.
Order from OTS or SLA $1.60 61-19966

Trans. of A[kademiya] N[auk] G[ruzinskoi] SSR, Tiflis. Institut Elektroniki, Avtomatiki i Telemekhaniki. Trudy, 1960, v. 1, p. 17-23.

DESCRIPTORS: *Machine translation, Data processing systems, Data, Processing, Languages, Intelligibility, USSR.

The creation of a system of word rules correlating the category forms of the source language (Russian) with the particular category forms of the language into which one is translating (Georgian): rules for the construction of words from stems and corresponding affixes, and the placement of those words in the sentence, is discussed.

Mamedaliev, Yu. G.
THE DEVELOPMENT OF SCIENCE IN AZERBAYDZHAN SSR. 3 Oct 61 [96]p. JPRS: 8977.
Order from OTS or SLA $8.60 61-28562

Trans. of mono. Razvitie Nauki v Azerbaidzhane, Baku, 1960, 139p.

DESCRIPTORS: *Science, *Scientific research, USSR, Chemistry, Mathematics, Physics, Astrophysics, Power plants, Well drilling, Geology, Geography, Plants, Genetics, Agriculture, Biology, Medical research, History, Language, Philosophy, Social sciences.

Contents:
From the history of the development of science in Azerbaidzhan
The development of science in Azerbaidzhan during the Soviet regime
Chemistry
Mathematics
Physics
Astrophysics
Power engineering
Drilling and operation of petroleum and gas wells
Geology
Geography
Botany
Genetics and plant selection
Soil science
Agricultural chemistry
Zoology
Medical sciences
Agricultural sciences
History
Linguistics
Literary criticism
Architecture and art
Philosophy
Economics and law
Oriental studies

HERALD OF COMMUNICATIONS, 1956 [VOL. 16] NO. 7(196). 11 Sep 61 [141]p. JPRS: 7066.
Order from OTS or SLA $11.00 61-28585

Trans. of Vestnik Svyazi (USSR) 1956 [v. 16] no. 7(196) including covers.

DESCRIPTORS: *Communication systems, Safety, Economics, Communication equipment, Telephone communication systems, Radio transmitters, Tetrodes, Design, Operation, Telegraph equipment, Maintenance, Telegraph signals, Distortion, Measurement, Meters, Telephone poles, Telephones, Wiring diagrams, Multiplex transmission, Radio receivers, Frequency, Tests, Postal systems, Rural areas, Periodicals, USSR.

Contents:
Publicizing and disseminating advanced experience is a matter of national importance (editorial)
Utilizing beam-power tetrodes in shortwave transmitters, by N. V. Zaryanov and N. V. Yulovskii
An electronic device for measuring signal distortion in start-stop telegraph instruments, by A. V. Gorbunov
Poles for overhead communication and radio-retransmission lines made of asbestos-cement pipes, by G. V. Shuleykin and E. L. Poverennyi
Type VS-3 multiplexing equipment for steel circuits, by N. A. Zisman and others
Improving the amplitude-frequency response of the receiver of the DR-89 rack, by A. S. Pal'chun
The application of advanced experience, by P. S. Kornienko
Young communications workers on the way to new construction sites
Preventive inspections and maintenance of telegraph equipment, by A. G. Smiryagin
Removal of dust from mail by means of a central air-suction system, by N. A. Lodzik and V. A. Bruker
We must show concern about our young specialists, by V. F. Poltavtsev
Cross training in skills - An important reserve at communications enterprises, by P. I. Lysykh and P. M. Krytsyn
Improve the quality of postal services to the rural population
More attention to the problems of safety technique at communications enterprises, by R. M. Likhtin
Results of the application of the labor productivity growth index, by N. A. Protasov
We must eliminate shortcomings in the organization of efficiency work at communications enterprises, by A. V. Gavrilov
Displays at the industrial exhibition at Hannover, by D. A. Bunin.

HERALD OF COMMUNICATIONS, 1957 [VOL. 17] NO. 2(203). 5 Oct 61 [181]p. JPRS: 7024.
Order from OTS or SLA $13.00 61-28746

Trans. of Vestnik Svyazi (USSR) 1957 [v. 17] no. 2(203) including covers.

DESCRIPTORS: *Communication systems, Communication equipment, Postal systems, Photographic equipment, Telegraph equipment, Telegraph systems, Automation, Telephone communication systems, Urban areas, Telephone cables, Installation, Radio relay systems, Antennas, Protective coverings, Precipitation, Countermeasures, Periodicals, USSR.

Contents:
For radical improvement in postal services (editorial)
Type FTA-M phototelegraphic apparatus, by G. N. Bogorodskii and G. P. Tikhanov
Conversion of SMT-34 apparatus to an improved design based on new type tubes, by V. P. Litvinov and S. V. Malyutin
Protection of radio relay system antennae from the effects of precipitation, by V. K. Paramonov
Basic principles and methods of determining the economic efficiency of new technical measures in communications economics, by A. Vishnevskii
Boosting the productivity of cable layers in setting up long distance cable lines, by O. M. Dushina
Developing and improving long distance telephone communications
An experiment in automation of telegraphic communications at Minsk telegraph office
Raising the productivity of labor, by I. S. Golovanevskii
The code button switchboard system in telegraph channels combined with the direct connection system, by V. L. Tokalevich
The technology of telegram processing, by S. Yu. Khrushcheva
Propagation of progressive methods
The creative initiative of efficiency engineers
Improving the operation of municipal telephone networks (conference to exchange advanced experience in services rendered by line installation of the municipal telephone networks)
On the Board of the Ministry of Communications USSR
The creative work of efficiency experts and inventors
Non-contact automatic telephone stations, by V. N. Roginskii
For better promotion of progressive methods, by V. G. Novikov.

HERALD OF COMMUNICATIONS, 1957 [VOL. 17] NO. 5(206). 3 Oct 61 [145]p. JPRS: 7029
Order from OTS or SLA $11.00 61-28726

Trans. of Vestnik Svyazi (USSR) 1957 [v. 17] no. 5(206) including covers.

DESCRIPTORS: Ultra high frequency, *Radio broadcasting, *Antennas, *Radio stations, *Radio equipment, Design, *Radio communication systems, Television communication systems, *Radio relay systems, Economics, *Radio operators, Housing, Communication systems, Periodicals, USSR.

Contents:
Toward further development of radio communications broadcasting, and television facilities, by Z. V. Topuria
The development of ultrashort-wave radio broadcasting, by A. L. Badalov
Mountain-top radio relay communications lines of Kirgizia, by K. N. Anan'ev

Recent trends in the development of short-wave radio communications, by L. A. Kopytin
New medium wave radio broadcasting antennas on low supports, by B. S. Nadenenko and L. P. Pozdnyakov
New equipment for broadcasting control rooms and studios, by A. N. Arutyunov
Some problems of economics of radio relay lines, by P. A. Selivanov
Leading radio operators
An experiment in relaying central broadcasts at the Novosibirsk receiving radio station, by V. A. Udov
Completing the extension of radio networks to twenty rayons of the Kiev oblast, by I. V. Gulygin and M. A. Margulis
Creative initiative
Constructing housing for communications personnel (without outside assistance) by N. A. Novikov
Increasing the ranks of efficiency experts, by A. V. Gavrilov and S. G. Kanevskii
The creativeness of efficiency experts and inventors
Some new developments in radio engineering industry in France, by N. N. Kamenskii and N. V. Zaryanov
New developments in foreign technology, by Ya. V. Basaev
The delegation of the Ministry of Communications USSR in China People's Republic
Advice concerning state pensions.

HERALD OF COMMUNICATIONS, 1957 [VOL. 17] NO. 12(213). 13 Aug 61 [158]p. JPRS: 7073.
Order from OTS or SLA $11.50 61-27973

Trans. of Vestnik Svyazi (USSR) 1957 [v. 17] no. 12(213) including covers.

DESCRIPTORS: *Communication systems, Communication equipment, Telegraph systems, Telephone communication systems, Operation, Circuits, Climatic factors, Telephone cables, Installation, Maintenance, Radio transmitters, Cathodes, Amplifiers, Distortion, Measurement, Radio transmitters, Telegraph transmitters, Frequency, Transportation, Inventions, Personnel, Tests, Safety, Periodicals, USSR.

Contents:
For uninterrupted operation of winter conditions (editorial)
Determination of the location of cable sheathing leaks by means of radioactive gases, by T. V. Abramova and others
On the noise immunity of different channels (of multichannel systems) used for multiplexing balanced cables, by Yu. D. Farber
Replacement of tungsten-cathode high-power electron tubes in radio transmitting systems with activated-cathode tubes, by N. V. Zaryanov
An apparatus for measuring nonlinear distortions, by L. Ya. Kantor
Laying cable conduits without trenches with BG-1 machine, by A. S. Vazetdinov
Alternating operation of the telephone and of the teletypewriter system over one telephone circuit, by S. G Badaev
On the principles and indices of the classification of communications enterprises (a discussion), by O. S. Srapionov
Nomenclature of the planning indices should be improved and financing system should be simplified, by K. P. Cherivanenko
Methods of raising operating stability of long distance telegraph-and-telephone service, by B. S. Zakharov
Some characteristics of the measurements of potential difference between cable sheathing and ground, by P. V. Sinitsyn
From the experience of organization of printed-matter dispatching, by A. I. Kavtaz'ev
Methods of checking operating activities of communications enterprises should be improved, by A. M. Markus
Upsurge of improvement work at communications enterprises of Ukraine, by G. Z. Sinchenko
Conference of improvement workers of industrial communications enterprises, by A. N. Arutyunov
Creativity of improvement workers and inventors
A new method of measuring frequency bandwidth radiated by radiotelegraph transmitters, by M. S. Gurevich
A review of the book "USSR transportation and communications", by L. M. Soloveichik
A review of the book "Central (Moscow) Telegraph Office of Soviet Union", by N. N. Grebnev
More attention must be given to labor protection and safety measures (All-Union Telephone Conference)
Two weeks in Poland, by M. V. Kryuchkov
Radio-amateurs' creative initiative: All-Union Exhibition of the Work of Amateur Radio Designers (No. 14).

HERALD OF COMMUNICATIONS, 1958 [VOL. 18] NO. 8(221). 26 Sep 61 [135]p. JPRS: 7013.
Order from OTS or SLA $10.50 61-28589

Trans. of Vestnik Svyazi (USSR) 1958 [v. 18] no. 8(221) including covers.

DESCRIPTORS: *Communication systems, Facsimile equipment, Radio communication systems, Facsimile communication systems, Electronics, Radio broadcasting, Monitors, Floating bodies, Storage batteries, Operation, Frequency dividers, Color television, Television, Design, Radio relay systems, Telegraph systems, Quality control, Postal systems, Urban areas, Machines, Radio transmitters, Telephone poles, Loading Installation, Hoist, Transmission lines, Personnel, Housing, Periodicals, USSR.

Contents:
Build better, faster, cheaper, by P. M. Zernov
FTA-M2-type facsimile equipment, by Yu. G. Danilevskii and G. P. Tikhanov
Radio facsimile communications using frequency modulation of the transmitter carrier, by I. A. Dorrer and others
An automatic system for monitoring radiobroadcast systems, by I. I. Dombrovskii
Why floating storage batteries lose their capacity, by B. A. Piontkovskii
Communications and radioelectronics at the All-Union Industrial Exposition of 1958
Developing a color-television system
The system of sanctions for the violations of telegraph work quality in communications enterprises operating on independent financing, by M. M. Glushko
More attention to production laboratories at communications enterprises, by B. S. Zakharov and M. K. Titov
Useful projects of the collective of the Glazov LTU (Line Technical Center) by I. I. Baranchikov
Let us make the work of letter carriers easier, by

S. A. Sushkova
The experience of the Khar'kov Post Office Collective, by L. Ya. Yakovlev
We must improve communications facilities services for agricultural workers, by I. V. Bulygin
Elimination of defects in the 50-kw shortwave transmitter, by Ye. P. Khmel'nitskii
A technical laboratory at the Nikolayev LTU, by G. M. Borokhovich
A machine for loading, installing, and replacing poles in the construction and repair of overhead communication lines, by I. I. Zhad'ko
Cable-laying in rocky soil, by S. V. Zaslavski and I. E. Khariton
Small standard television center, by I. I. Govallo
The initiative of the Gor'kii workers has been taken up, by G. N. Sharoglazov
The communications workers of Tomsk are building housing for their families, by S. A. Grigorovich
The Gor'kii television station
Push the mechanization of work processes in the post office
All-Union scientific session devoted to Radio Day.

HERALD OF COMMUNICATIONS, 1961 [VOL. 21] NO. 6[255]. 12 Sep 61 [161]p. JPRS: 9956.
Order from OTS or SLA $12.00 61-28611

Trans. of Vestnik Svyazi (USSR) 1961 [v. 21] no. 6[255] including covers.

DESCRIPTORS: *Communication systems, Communication equipment, Television communication systems, Telephone communication systems, Telegraph transmitters, Telegraph signals, Distortion, Radio transmitters, Circuits, Thyratrons, Radio broadcasting, Monitors, Personnel, Training, Tests, Periodicals, USSR.

Contents:
Latest communication equipment
For authenticity in recording performance indices of communications enterprises (editorial)
At the collegium of the USSR Ministry of Communications
Apparatus for high-frequency tandem connection of 12- and 60-channel groups of telephone channels, by N. M. Driatskii and others
Comparison circuit for automatic monitoring of the quality of radio broadcasting systems, by G. B. Askinazi
A high-speed thyratron protection system in the anode circuits of radio transmitters, by M. V. Artem'ev and P. I. Udalov
Apparatus for section service communication with selective ringing, by T. M. Sakharova and others
Methods of reducing the transmitter-caused distortion of the ST-35 and STA telegraphs, by B. M. Prikhod'ko
Moscow on European television screens
Well prepared for the changeover to self-supporting basis, by T. D. Timasheva
Model communication service for Tselinnyi (Virgin Land) Krai, by I. G. Takhman
The level of the development and improvement of communication facilities in Tselinnyi (Virgin Land) Krai must by raised
Collective of the USSR Central (Moscow) Telegraph Office to communication workers of Tselinnyy Krai
New telephone links and broadcasting channels have been set up
How we are improving performance quality and raising labor productivity, by N. P. Ananchenko and D. V. Perkis
Experience of introduction of mechanized tools on line work, by A. G. Smiryagin
Rayon communications office is a Communist-labor enterprise, by D. A. Ishin
With excellent quality, by P. V. Burdasova
Qualified cadres for communications enterprises, by M. V. Ryzhov
On the further improvement of the structure of communications organizations
To the 22nd Congress of the Communist Party of Soviet Union: Our labor, our creativity
At the Ministries of Communications of Union Republics
Communication equipment at Leningrad Industrial Exhibition
Creative initiative of communication workers must be developed in all possible ways.

Barthel, Kurt and Zitzmann, Werner.
THE LINE EQUIPMENT OF THE 12 MC CARRIER FREQUENCY SYSTEM. [1961] 14p. 6 refs.
Order from SLA $1.60 61-20543

Trans. of Siemens-Z[eitschrift] (West Germany) 1960, v. 34, no. 11, p. 777-786.
Another trans. is available from ATS $21.25 as ATS-92N52G [1961] 14p.

DESCRIPTORS: *Television communication systems, *Telephone communication systems, Voice communication systems, Communication systems, *Amplifiers, *Transmission lines, Frequency.

SOCIAL SCIENCES

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING, NO. 30. 2 June 61, 48p. 39 refs. JPRS: 8372.
Order from OTS $1.50 61-31465

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevodu i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 4 (5 reports).

DESCRIPTORS: *Machine translation, Data processing systems, Data, Processing, Documentation, Chemistry, Dictionary, Electrical engineering, Bibliography, Preparation.

Contents:
A structural diagram for solving problems concerning one class of information, by V. B. Borshchev and F. Z. Rokhlin
Classification and bibliographic analysis of informations requests in electrical engineering, by U. I. Dobrushina
On a dictionary of chemical compounds, by E. D. Stotskii

An approach to the problems of documentation, by N. I. Styazhkin and N. D. Kravchenko
On certain systems for recording structural formulas in organic chemistry, by G. E. Vleduts and E. D. Stotskii.

Doesschate, J. F. ten. and others.
BUDGETARY CONTROL AND STANDARD COST ACCOUNTING IN IRON AND STEEL WORKS: EXPERIENCES WITH BUDGETARY CONTROL AT KONINKLIJKE NEDERLANDSCHE HOOGOVENS EN STAALFABRIEKEN N. V., IJMUIDEN. Oct 61.
Order from BISI £6 5s BISI-2381

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 20 July, p. 977-987.

DESCRIPTORS: *Iron industry, *Steel industry, Costs, Economics, *Management engineering.

Contents:
Budgetary control seen from the top management point of view, by J. F. ten Doesschate
Budgetary and standard cost control seen from the cost office point of view, illustrated by the blast furnace plant as an example, by G. van Wieringen
Budgetary control seen from the works management point of view, by F. W. E. Spies.

Dzhandil'din, N. D.
FORTIETH ANNIVERSARY OF THE KAZAKH SSR AND THE COMMUNIST PARTY OF KAZAKHSTAN. 3 Oct 61 [10]p. JPRS: 10408.
Order from OTS or SLA $1.10 61-28628

Partial trans. (excerpts) of Akademiya Nauk Kazakhskoi SSR, Alma-Ata. Vestnik, 1961 [v. 17] no. 6(195) p. 7-21.

DESCRIPTORS: *Communism, Growth, USSR.

Encomium.

Gavello, R. M. and Rauen, J.
BUDGETARY CONTROL AND STANDARD COST ACCOUNTING IN IRON AND STEEL WORKS: EXPERIENCE IN STANDARD COSTING AT ITALIAN STEELWORKS, TAKING CORNUGLIANO S. p. A. AS AN EXAMPLE. Oct 61.
Order from BISI £4 BISI-2382

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 28 July, p. 987-990.

DESCRIPTORS: Iron industry, Steel industry, Costs, Economics, *Management engineering.

Contents:
Introduction of a standard costing system as a tool for top management, by R. M. Gavello
Comments on standard costing at Cornigliano S. p. A., by J. Rauen.

Grushin, B. and Chikin, V.
CONFESSION OF A GENERATION (Ispoved' Pokoleniya). 28 Sep 61 [25]p. JPRS: 10226.
Order from OTS or SLA $2.60 61-28587

Trans. from Komsomol'skaya Pravda (USSR) 1961, 21 July.

DESCRIPTORS: *Public opinion, *Public opinion polls, USSR.

An analysis is presented of 17,446 replies out of 19,000 that were made by Soviet youth born between 1931 and 1946 to 12 questions asked by the Institute of Public Opinion. These were: (1) What do you think of your generation; do you like it; are you satisfied with its actions? (2) On what are your opinions based? (3) What features of Soviet youth are, in your opinion, the strongest? In what way are they most vividly demonstrated? (4) Are there, in your opinion, any negative features in young people which are widely apparent? If so, what are they? (5) What evidence do you have in support of this view? (6) What, in your opinion, is the most characteristic of your contemporaries: purposefulness or aimlessness? (7) Do you have a personal aim in life? (8) What is it? (9) What must you do to achieve it? (10) What have you already done? (11) Do you think you will achieve your aim? (12) On what do you base your certainty? Some 83.4% answered that they were satisfied with their generation, 5.5% were undecided, and 11.1% were not satisfied. Over a third of the replies stressed love of country as the most outstanding feature of Soviet youth. A total of 85.3% characterized their contemporaries as being purposeful: 96.7% replied that they had a personal aim. Of the 3.3% who did not, some had not yet decided, and others had never thought about it. Some 78.9% believed that they would achieve their aim.

TRANSLATIONS IN PROCESS

AIRCRAFT CONSTRUCTION: REPORT BY A CONFERENCE CONCERNING LANDING GEAR HELD 22-23 JULY 43 IN BERLIN.
Mono. Flugzeugkonstruktion: Bericht über die Sitzung Fahrwerke am 22-23 Juli 43 in Berlin, Berlin, 86p.

[ATOMIC ENERGY: SELECTED TRANSLATION]
Atomnay Energiya (USSR) 1961, v. 11, no. 2, p. 109-121, 133-139, 184-189.

THEORY AND APPLICATION OF DISCRETE AUTOMATIC SYSTEMS: TRANSACTIONS OF THE CONFERENCE.
Mono. Teoriya i Primenenie Diskretnykh Avtomaticheskikh Sistem: Trudy Konferentsii, Moscow, 1960, 572p.

Abramovich, Genrikh Naumovich
THEORY OF TURBULENT JETS.
Mono. Teoriya Turbulentnykh Struy, Moscow, 1960, 715p.

Akhiezer, N. I.
THE CLASSICAL PROBLEM OF MOMENTS AND CERTAIN PROBLEMS OF ANALYSIS CONNECTED WITH IT.
Mono. [Klassicheskaya Problema Momentov i Nekotorye Voprosy Analiza, s Svyazannye s Neyu] Moscow, 1961, 310p.
To be published by American Mathematical Society, 190 Hope St., Providence 6, R. I.

Bari, N. K.
TRIGONOMETRIC SERIES.
Mono. pub. Moscow, 1961, 936p.
To be published by American Mathematical Society, 190 Hope St., Providence 6, R. I.

Blokhin, D. I., Blokhintsev, D. I. and others.
A PULSE REACTOR FOR FAST NEUTRONS.
Mono. Mezhdunarodnoe Agenstvo po Atomnoi Energii: Seminar po Fizike Reaktorov na Bystrykh i Promezhutochnykh Neitronakh, Vienna, 3-11 Aug 61. Rept. no. 18/18, 32p.

Leipunskii, A.M., Kazachkovskii, O. K. and others.
PHYSICAL CHARACTERISTICS OF THE BR-5 REACTOR.
Mono. Mezhdunarodnoe Agenstvo po Atomnoi Energii: Seminarppo Fizike Reaktorov na Bystrykh i Promezhutochnykh Neitronakh, Vienna, 3-11 Aug 61. Rept. no. 18/32, 37p.

Losev, S. A. and Osipov, A. I.
STUDY OF NONEQUILIBRIUM PHENOMENA IN SHOCK WAVES.
Uspekhi Fizicheskikh Nauk (USSR) 1961, v. 74, no. 3, p. 393-434.

Marchuk, G. I.
METHODS OF DESIGNING NUCLEAR REACTORS FOR INTERMEDIATE AND FAST NEUTRONS.
Mono. Mezhdunarodnoe Agenstvo po Atomnoi Energii: Seminar po Fizike Reaktorov na Bystrykh i Promezhutochnykh Neitronakh, Vienna, 3-11 Aug 61. Rept. no. 18/84, 40p.

Meliya, G. T.
SOLAR POWER RESOURCES OF THE GRUZINSKAYA SSR.
Mono. Gelioenergeticheskii Resursy Gruzinskoi SSR, n.p., 1959, 125p.

Pikelner, S. B.
FUNDAMENTALS OF COSMIC ELECTRODYNAMICS.
Mono. Osnovy Kosmicheskoy Elektrodinamiki, 1961, 294p.
To be published by Gordon & Breach Science Publishers, Inc.

Pinsker, M. S.
INFORMATION AND INFORMATION STABILITY OF RANDOM QUANTITIES AND PROCESSES. Monograph #7 of Problems of Transmission of Information.
Mono. Informatiya i Informatsionnaya Us toichivost' Sluchaynykh Velichin i Protsessov. 1960. 201p.
To be published by Gordon & Breach Science Publishers, Inc.

Reznikov, M. E.
AIRCRAFT AND ROCKET FUELS AND LUBRICANTS.
Mono. Aviatsionnye i Raketnye Topliva i Smazochnye Materialy, Moscow, 1960, 207p.

Salamandra, G. D., Bazhenova, T.V. and others.
CERTAIN METHODS OF STUDYING HIGH-SPEED PROCESSES AND THEIR APPLICATION TO THE STUDY OF THE FORMATION OF DETONATION WAVE, CHAPS. 1-2.
Mono. Nekotorye Metody Issledovaniya Bystroprotekayushchikh Protsessov i Ikh Primenenie k Izucheniyu Formirovaniya Detonatsionnoi Volny, Moscow, 1960, p. 5-57.

Shevelyuk, M. I.
THEORETICAL BASES FOR THE DESIGN OF LIQUID FUEL ROCKET ENGINES.
Mono. Teoreticheskie Osnovy Proektirovaniya Zhidkostnykh Raketnykh Dvigatelei, n.p., 1960, 684p.

Stekol'nikov, I. S.
NATURE OF THE LONG SPARK.
Mono. Priroda Dlinnoi Iskry, Moscow, 1960, 271p.

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